Paper Prosperity Probable for Some Time to Come

AT LAST those real factors which make for profitable business are crowding to the surface of the stream of commerce and are being generally recognized by every department of industry, and adopted by each division of trade.

"The common opinion," says a foremost authority in a recent business review, "is that a degree of equilibrium and stability has been attained in our industries which gives promise of a high state of prosperity, **probably for some years to come.**" This "common opinion" is based upon such trustworthy indices as the tonnage carried by common carriers; the payments through banks; and the erection of buildings of all character, all of which have been the largest ever known.

The net earnings to industries last year were larger than in any year since the boom times, but these earnings came to stay and grow, not to evaporate as they did in the years following the boom times. They are substantial, not phoney, earnings this time.

Then again, these earnings have come as a result of scientific economic operations, not as a result of fictitious marking up of prices, which collapsed as soon as the buying spurt passed. Nothing of that kind this past year, nor promise of it for years to come!

Business men have learned valuable lessons in the past five years. They know now that permanent profits are the result only of stabilized, economic production, buttressed by modern merchandising methods. They have learned that it is silly and goose-like to try and "gip" the ultimate consumers into any belief that the world will not produce for them those commodities in abundance, and at a fair price, which they demand and for which they are willing to pay a reasonable price. Manufacturers are now more ready and desirous to operate on steady capacity production at a fair profit throughout the year, than to run their mills at peak production and peak profits for three months and then hit the price toboggan for the balance of the year, in an endeavor to "buy" enough orders to meet their payrolls.

The ultimate consumers also seem more satisfied to co-operate with manufacturers and merchants. They are the real paymasters. The ultimate consumers hold the purse strings and control prices. Their demands are just and simple. Give them stable prices and good value and they will buy. They detest, abhor and fight bitterly against juggled discount lists, constantly varying prices and unstable values. **They know**; make no mistake about it. The ultimate consumers know this one thing, if they know nothing else, that constantly changing prices mean constantly changing values. To think otherwise is to denominate yourself as stupid.

Billions of dollars annually are spent to educate these buyers and users of commodities up to the quality and service of commodities offered them. It's the exhibition of errant folly to think that any manufacturer can "kid" them into buying goods juggled from one price basis to another. Cut prices make them suspicious—rightfully so—of cut values.

The ultimate consumer does not care what the price basis is upon which he purchases. But he wants that basis **maintained.** He will not continue his allegiance to a commodity which he buys on one price basis one day and finds his neighbor buying on a lower price level the next day. Nothing doing—no orders! Fire sale methods are a thing of the past.

The ultimate consumers, therefore, are viewing the present stabilized era with a wholesome confidence which assures the placement of large orders regularly for future delivery. That in turn insures a profitable business situation. And then every producer, buyer and consumer of commodities knows, or ought to know, that there are such infallible indices as the commodity price index. If the general commodity index number, therefore, be 158, you, Mr. Manufacturer of paper or any other commodity, cannot maintain a price index of 175, except you go to your customers and show them indubitably, that because of the special, very special, conditions surrounding and governing the production of your commodity, you cannot produce on any less price level, maintain your standard quality, and make a reasonable profit. If you do this bravely, sincerely, honestly—and it is being done—you can get by. But, remember, your consumers know all about productions, prices, indices, standards and values; and it's up to you, Mr. Manufacturer, to go clean to your trade.

The era for which we have been longing and waiting in the paper industry is upon us. It is to be an era marked by "a high state of prosperity, probably for some years to come." An era of stabilized prices, and maintained values of commodities, economically produced and honestly merchandised; the era of balanced business and profit for all in 1926.

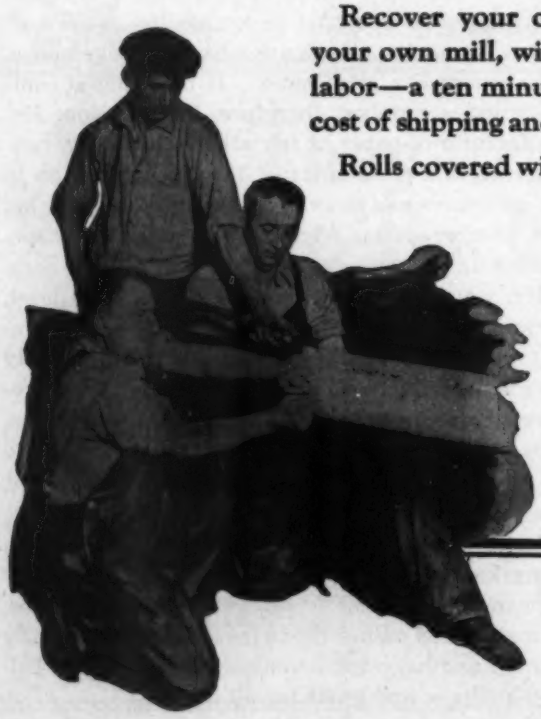
Save YOUR FELTS *and* WIRES *with* Goodrich *Slip-Sleeves*

WHEN rubber covered felt and tube rolls were accepted as better than wood, iron or brass, Goodrich began experimenting to find a way to reduce the cost of recovering rolls. The Slip-Sleeve is the result.

Recover your own rolls, in your own mill, with your own labor—a ten minute job. Save cost of shipping and delay.

Rolls covered with Goodrich Slip-Sleeves in continuous service nearly two years have proven absolutely satisfactory—tight and firm as when applied; no indication of loosening, creeping, roughening, pitting or other wear.

And the first cost is so low compared to old methods of rubber covering that the entire wet end of your machine can be equipped at the price formerly paid for a few rolls.



This is the announcement Paper Mill Superintendents have been awaiting for years. Take full advantage of it.

THE B. F. GOODRICH RUBBER CO.

Akron Atlanta Boston Buffalo Chicago Dallas
Denver Detroit Kansas City Los Angeles New York
Philadelphia San Francisco Seattle

Seventy-two Mills in Safety Contest

THE Safety Contest among the members of the Paper and Pulp Section of the National Safety Council who operate pulp or paper mills has on this date attained a magnificent stride and can be considered now as being in full swing. Although at the date of this writing, eight more days are yet open for the receipt of registrations—February 15 having been set as the closing time—twenty-six more mills have entered the contest since the report of forty-six which we published in our January issue. This brings the total at present to seventy-two mills, or only ten less than double the number that were entered in the thirty-day contest last August. This is gratifying, indeed, and will surely be the means of a great safety effort and accomplishment in our pulp and paper mills.

Several firms who are members of the section but do not operate pulp or paper mills, have expressed their desire to enter the contest. These firms operate what is known as finishing mills or converting plants. We regret that there can be no provision made for them; it is impossible, of course, since the operating conditions and hazards in their plants are different than those in pulp and paper mills. The suggestion has been made by the chairman of the section however, that for teh sake of safety results, such firms of this class that desire to make a safety record, should send in their names to the National Safety Council, not as eligible for the cup, but as desirous of receiving the literature which goes with the contest. At the National Congress the judges of the contest can give them suitable rating and recognition.

The following mills are those which are registered in the contest to date:

The Adams Bag Co., Chagrin Falls, Ohio—1 mill.
The Albemarle Paper Mfg. Co., Richmond, Va.—3 mills.
Belgo Canadian Paper Co., Ltd., Shawinigan Falls, Que.—1 mill.
Bird & Son, Inc., East Walpole, Mass.—2 mills.
Canada Paper Co., Ltd., Windsor Mills, Que.—2 mills.
The Champion Fibre Co., Canton, N. C.—1 mill.
The Chillicothe Paper Co., Chillicothe, Ohio—1 mill.
Continental Paper Co., Bogota, N. J.—1 mill.
Continental Paper & Bag Mills, New York City—1 mill.
Defiance Paper Co., Niagara Falls, N. Y.—1 mill.
De Grasse Paper Co., Pyrites, N. Y.—1 mill.
Dill & Collins Co., Philadelphia—2 mills.
Eastern Manufacturing Co., South Brewer, Me.—2 mills.
The Falls Manufacturing Co., Oconto Falls, Wis.—1 mill.
Finch, Pruyn & Co., Inc., Glens Falls, N. Y.—1 mill.
Fort Howard Paper Co., Green Bay, Wis.—1 mill.
Great Western Paper Co., Ladysmith, Wis.—1 mill.
Hammermill Paper Co., Erie, Pa.—1 mill.
Hollingsworth & Vose Co., Boston—2 mills.
Itasca Paper Co., Grand Rapids, Mich.—1 mill.
Kimberly-Clark Co., Neenah, Wis.—7 mills.
Lakeview Paper Co., Neenah, Wis.—1 mill.
Laurentide Co., Ltd., Grand Mere, Que.—1 mill.
Lincoln Pulp and Paper Co., Ltd., Merriton, Ont.—3 mills.
Marathon Paper Mills Co., Rothschild, Wis.—1 mill.
Marinette & Menominee Paper Co., Marinette, Wis.—2 mills.
The Mead Pulp and Paper Co., Chillicothe, Ohio—2 mills.
Michigan Paper Co., Plainwell, Mich.—1 mill.
Nekoosa-Edwards Paper Co., Port Edwards, Wis.—1 mill.
Northern Paper Mills, Green Bay, Wis.—1 mill.
Paraffine Companies, Inc., San Francisco, Calif.—5 mills.
Port Huron Sulphite and Paper Co., Port Huron, Mich.—1 mill.
Powell River Co., Ltd., Vancouver, B. C.—1 mill.
Racquette River Paper Co., Potsdam, N. Y.—1 mill.
Rhinelander Paper Co., Rhinelander, Wis.—1 mill.
Robertson Paper Co., Montville, Conn.—1 mill.
Spanish River Pulp and Paper Mills, Ltd., Sault Ste. Marie, Ont.—4 mills.
Spruce Falls Co., Ltd., Kapuskasing, Ont.—1 mill.
Strathmore Paper Co., Mitteneague, Mass.—4 mills.
Thilmany Pulp and Paper Co., Kaukauna, Wis.—1 mill.
The Upson Company, Lockport, N. Y.—1 mill.
Wausau Sulphate Fibre Co., Mosinee, Wis.—1 mill.
W. Virginia Pulp and Paper Co., Mechanicsville, N. Y.—1 mill.
W. Virginia Pulp and Paper Co., Tyrone, Pa.—1 mill.
The York Haven Paper Co., York Haven, Pa.—1 mill.

An indication of the spirit that is entering into this contest is shown in the report from a large eastern mill which recorded one accident on the 29th of January entailing one lost day. The safety supervisor stated on his report that it was tough luck, but he hoped that other mills had done as well as they did. The slogan for February which he has made for his mill is "No accident month, nothing less."

The next Congress of the National Safety Council has been set for Detroit, Mich., October 4 to 9, 1926. The Paper and Pulp Section will hold the usual two-day session, and possibly a third. A joint meeting is being sought with the Woodworking Section in an effort to give proper attention to the hazards of the woods.

Wastes and Losses

THE following paragraph is taken from a letter which we received from a correspondent a short time ago after he had visited a certain paper mill:

"Just how the manager can sit in the front office and be satisfied with results where there are such tremendous wastes in fiber, power, oil, etc., out in the mill is more than I can conceive."

There was much more in this letter about the tremendous wastes and loss of fiber, loss of power, oil, etc., in this mill than is noted in the above quotation. The man who wrote the letter has had considerable mill experience and was trained in a mill where they are always watching for losses and correct them as soon as seen.

No doubt every mill has various kinds of losses

Approved for Paper Mill Service

Stanley

Solid Woven Cotton Belting

It Must Be Better Suited

Deferred Billing Offer

Within 60 days, you can approximate how a belt is going to stand up. On this offer to mills of good credit standing we defer billing for 60 days. At the end of this period, the belt is to be paid for only if it is making good in your service.

On your letterhead or order form describe the drive on which you expect to try Stanley—name of equipment, operating conditions, horsepower transmitted, diameter and width of faces of pulleys, what type of idler used, length of belt and type of belt last in use.

A number of Paper Mills are replacing other belting with Stanley on beater, Jordan and other drives over practically the entire range of mill service; also as "slipping belts" on winding rolls where it gives better service than link leather.

To be convinced and then to actually make the change, engineers or superintendents must have found Stanley better suited.

Read the following data. If you are favorably impressed order a Stanley now on our deferred billing offer for a real working demonstration.

Unaffected by Heat — Extreme heat and dryness through years of service have no noticeable effect on Stanley.

Alkalis and Vapors — Vapors, heavy humidity and contact with alkalis have no effect upon the working quality of Stanley.

Oil — In the oil fields and refineries Stanley often runs for years soaking with oil. Compared to that service any other problem of contact with oil is dwarfed.

Stretch and Slip — Stanley is a very tight, close-woven belt. Stretch comes out in the first day or two running. Authentic tests have proven that Stanley has less slip than any belt running at rated capacity.

Rapid Joining — An easy belt to join. Any standard fastener takes firm hold in the tight belt fabric.

Stanley is better suited. Our deferred billing offer invites a trial of Stanley under your own personal observation.

Stanley Belting Corporation

320 Broadway, New York
17 N. Jefferson St., Chicago
124 Adelaide St., W., Toronto, Ont.
42A Southwark St., S. E. 1. London, England

which could be corrected if they were noted, but in many cases, superintendents, managers and other officials make their rounds through the mills day after day and many times each day and see these little losses, but do not think of them as losses, and it often takes someone from the outside to go through a mill to really see the wastes that are going on in many plants.

This is a tremendously big subject, because the wastes that are going on in the mill referred to in the above paragraph no doubt mean the difference between a loss and a profit; or in other words, if such a mill was running without any profits, if these losses were stopped, it would mean a considerable profit each year.

The important question is how to find these losses. Some of them small, of course, but in the aggregate they mean considerable. We do not have any remedy for these evils, but we wish to point out that we believe losses are constantly going on in most every paper mill which, if stopped, would make a considerable sum each year on the right side of the ledger.

It might be profitable for every mill to hire some outside man at certain intervals to go through the plant and inspect it and see what he could see where savings could be effected. We cannot afford to waste anything.

Our National Forests

IT SEEMS that the subject of reforestation, which is of such vital importance to every one interested in the future of the paper industry, is to have an enemy, or has had one that none of us has been considering, and he is a powerful one—no less a person than the western stockmen.

These gentlemen, two hundred strong, recently gathered in Salt Lake City and told the Senate Public Lands Committee how, by a few simple passes of the legislative wand, the National Forest rangers of the West should be parcelled out to the grazing interests. Their proposals abundantly bear out the statement made by the American Forest Association several months ago that certain western stockmen were organizing to break down the integrity of the National Forests. To the superficial reader, their proposals now made public may appear innocent enough, but analyzed in terms of privileges to be granted by law, they would virtually bring ninety million acres of Uncle Sam's forests under the dominion of a few powerful stockmen.

This seems rather a strong statement, but this is what we gather from the proposals that are made by these interests.

It would seem that there is sufficient land in this country both for reforestation and also for grazing, and it is to be hoped that nothing will be done that will put a crimp in the reforestation program, for every one connected with the paper industry knows the necessity for reforestation and the only regret of the industry is that this has not gone far enough.

Another matter that has been introduced in the present session of Congress is what is said to be the shortest forestry bill, and at the same time the most important from the standpoint of the eastern states, known as the McNary-Woodruff bill. It contains only seventeen lines, but it plans a ten-year program for the Federal Government in acquiring lands for National Forests on the head waters of navigable rivers.

This indeed is a very important measure to every one who is interested in paper manufacturing of the future, as it authorizes the Government to spend three million dollars a year for the next five years, and five million dollars a year for the succeeding five years, in purchasing forest land in the eastern half of the United States for a system of National Forests located in the Lake States, the White and Appalachian Mountains, and the pine section of the South.

The measure is sponsored by the American Forestry Association and is being supported by one hundred or more organizations throughout the country, which recognize the urgency of the Federal Government in meeting more fully its responsibility in providing for the future forest needs of the people and industry of the eastern states.

The expenditure, it is pointed out, will be a good investment from the standpoint of the Federal Government and the public. The National Forests so far acquired under the Weeks law of 1911 in the White and Appalachian Mountains are more than paying the expenses of administration. Furthermore, they are rapidly growing new forests which are increasing in value with the exhaustion of private forests. Numerous large communities depend on the watersheds included within the forests for their domestic water supply, and as the new timber becomes mature for cutting, industries draw upon them for lumber, fuel, pulp, etc. At the same time, these forests have demonstrated their value as playgrounds for the people of the Atlantic seaboards.

Extension of the National Forest policy in the East, it is asserted, will only be possible in the South and the Lake States when the amounts authorized by the McNary-Woodruff bill are made available. An early hearing on the bill is planned and its passage is confidently hoped for.

From consular reports, we learn of growing demands for pulp and paper in the Central and South American republics. Brazil offers expanding opportunities, the successful capture of which depends entirely upon price. Cuba is importing paper from Germany and Scandinavia at distinctly lower prices than the American product. Europe is trying to walk off with the market, and unless the paper industry of the United States co-ordinates and concentrates its effort, it can not hope to frustrate this purpose.

ALLIGATOR

TRADE MARK REG. U.S. PAT. OFFICE

STEEL BELT LACING

The Compression Grip

The double teeth penetrate lengthwise, the ends of the longer teeth protruding, are clinched down flat on the belt. Each tooth becomes a tiny vise holding the belt end in a grip of steel. The "pull" is against the entire belt as a unit. Friction in the belt ends and opening up of plies at the joints are eliminated.

The flexible joint is smooth and flush with the belt on both sides. Repeated tests have demonstrated its great reserve of strength—"the Strongest Belt Lacing on Earth."

The Hinge Pin

The steel hinge pin is made in two sections with oval faces that rock on each other eliminating wear on the lacing. To open joint for changing belt length, release tension and push out pin.

SIZES:

From No. 00 for tape belts to No. 75 for belts of 3/8 inch thickness there are eleven sizes—a complete range, suited to every thickness and width of belting.

A joint of Alligator Steel Belt Lacing usually lasts the life of the belt.

Perfection Brought this Popularity

Upwards of 8,000,000 belt joints have been made with Alligator Steel Belt Lacing in the last year. This represents a large proportion of the world's total use of belt lacing.

Back of this popularity lie the interesting scientific design of Alligator Steel Belt Lacing, the use of steel of special analysis, the indestructible steel hinge pin and adaptability to any service of modern belting installations.

Easy application with a hammer as the only tool is a convenience.

The detailed information in the opposite panel should interest you.

Leading retailers and wholesalers the world over supply Alligator Steel Lacing from stocks.

Flexible Steel Lacing Co.
4675 Lexington Street, Chicago, Ill.
In England at 135 Finsbury Pavement, London, E. C. 2

THE PAPER INDUSTRY

REG. U. S. PAT. OFF.

Vol. 7 FEBRUARY, 1926 No. 11

Maintenance of Proper Relations Between Employer and Employee

By E. M. HERR
President, Westinghouse Electric and Manufacturing Company

Address delivered before the Yale Divinity School and the New Haven Industrial Relations Council, January 9, 1926

ABOUT two generations ago the manufacturing industry was made up of small units, each with an individual proprietor who knew all parts of the business intimately and had personal contact with all his employees. The rapid development of and improvement in the steam engine, and later the application of electricity for supplying power, light and heat, have enabled manufacturing industries to grow and expand into larger and larger establishments, until today hundreds of thousands of people are employed by a single company where formerly only hundreds or sometimes thousands were employed. These large industrial units—usually in the form of stock companies or corporations—require a well organized body of employees led by one executive, who, because of the size and nature of the organization, is far removed from the workmen so-called—that is, the men who work more with their hands than with their heads. These workmen are by far the largest group of people employed in any given industry, and their proper management is one of the greatest and most difficult problems of manufacturing—a problem to the solution of which more study and effort is now being directed than to any other single problem in industry.

I have referred to the very large industrial establishments today and the number of workers employed by them. It is a fact, however, that notwithstanding the existence of these large industrial companies, less than one-third of the wage earners in the country are employed in them, and they themselves in the aggregate comprise but one per cent of the total number of manufacturers. These facts should be remembered if a correct perspective of the situation is to be had; but that there is a distinct trend toward larger industrial companies is undeniable and a consideration of the effect of this change upon the workers is therefore important.

Mr. Herr's splendid address is herewith given to our readers for the advanced thought that it expresses on the matter of co-operation between management and the workmen, which, we believe, is coming nearer and nearer to a more general and perfect reality.

In the early stages of growth of these large manufacturing units, as the responsible manager was unable to have personal contact with the workmen, they were often dealt with rather arbitrarily, causing them to feel the need for an organization among themselves by means of which they could cope with the employing organization, or as it is usually called, "the management." In forming their organizations the workmen not only included the employees of a single company, but brought into it all the workmen of a similar craft, regardless of their location. This constituted a union, and thus we have the Machinists' Union, the Carpenters' Union, the Miners' Union, etc.

Owing largely to lack of contact with the really responsible officers and to the absence, to a greater or less extent, of co-operative effort until rather recently between management and men, there were frequent clashes, which too often resulted in strikes or lockouts. About ten years ago progressive managers began making an effort to get into closer contact with their workmen, and to this end encouraged the formation of committees of workmen in each manufacturing plant, who could meet jointly with the foremen and other executives and discuss matters of mutual

interest. Through these meetings each obtained a broader and more correct view of the other's problems and conditions, and they were thus enabled to reach agreements which would otherwise have been impossible.

In England this co-operative contact between the workers and the management has not been developed, due probably to the different relation of the workmen as a class to the employers. This class consciousness has resulted in a much more complete development of the labor unions of that country. Their rules require that all matters in dispute between employer and employee be handled by representatives of the union, thus compelling the workmen in an industrial establishment to bring their complaints and desires to their employer's notice through third parties instead of directly through their own committees, as is largely the practice here. The greater possibility of co-operation between employer and employees and the better understanding which this co-operation produces are only some of the advantages which accrue to both and consequently to the consuming public, for which, in the last analysis, all industrial effort is made.

The Joint Conference Committee

In a recent address Mr. Herbert Hoover said, when speaking on the subject of "Elimination of Industrial Waste in Its Relation to Labor": "It is idle to argue that there are at times no conflicts of interest between the employee and the employer. But there are wide areas of activity in which their interest should coincide, and it is the part of statesmanship on both sides to organize this indentity of interest in order to limit the area of conflict."

A great deal has already been accomplished along the lines suggested by Mr. Hoover by encouraging the formation of joint conference committees in various industries, as stated above. The number of such committees or works' councils reported in operation has increased from about 200 in 1919 to over 1,800 in 1924, affecting a million and a quarter workers, or about one-tenth of those employed in manufacturing industries. These committees are elected by ballot by the workmen in such a way as to make them representative bodies; that is, each elected member of a joint conference committee represents a group or a certain number of employees, and these members are elected at regular intervals, usually annually, so that they at all times are the real choice of the employes they represent. I have called them members of a "joint conference committee" because that is the name usually given to such a body, and also because it fairly well expresses the character of the organization. The group of employees elected by the workmen joins a group of employees appointed by the responsible officials of the company, usually composed of foremen, assistant foremen, chief clerks, storekeepers and other minor officials with whom the representatives of the workmen come in contact in their daily duties and with whom they are more or less acquainted. The representatives of the management sit with the representatives elected by the workmen and together form the joint conference committee.

Speaking now more particularly of the Joint Conference Committee of the Westinghouse Electric & Manufacturing Company, which is fairly representative of similar organizations in other companies, this committee is called together at regular intervals of one or two months by the works manager, who generally presides at the meetings. In order to avoid any feeling among the members that the proceedings of the committee are not correctly nor fairly expressed in the minutes, two secretaries are appointed, one elected by the representatives of the men, the other by the appointees of the management. These two secretaries, both of whom are stenographers, carefully compare their notes of the proceedings of each meeting, and no permanent record is made until it is signed jointly by both secretaries. The entire minutes of each meeting are then published in the next issue of the "Shop News," a paper in which are recorded the local happenings among the employees as well as interesting items regarding the activities of the company. The "Shop News" is edited and printed by the company's publication department and the entire expense is borne by the company. It is distributed without charge to the employees, each receiving a copy.

The Responsibility of Management

Does this joint conference committee fairly replace the former personal contact between the responsible head of the business and the employees working under his direction? Before attempting to answer this question, it should be understood that a modern manufacturing industry is no longer owned in a large measure by those responsible for its management, as was the case of a generation or two ago. The ownership of a modern industry is now spread among many thousands of stockholders—in the case of two of the largest corporations, the number of stockholders has increased in the last twenty years from less than ten thousand to over three hundred thousand. It is becoming increasingly true, therefore, that in the case of our most important industries no large amount of stock is in the hands of any one individual or even any cohesive group of individuals. As a result the officers are not only controlled by any dominating owner or group of owners, but no one man or small group owns or represents a controlling interest in the company with whom the officers can properly confer in order to be guided as to its policies. This condition places a very heavy responsibility upon the board of directors and principal officers of such com-

panies. From a legal standpoint, this responsibility is to the stockholders only, but it must not be viewed too narrowly if one is to measure it correctly. In order to be properly safeguarded, the interests of the stockholders—the interests of the customers—the consuming public—and the interests of the employees must all have the fullest consideration of those in responsible charge of an industry; in fact, the first consideration must be the interest of the customer, for unless he is satisfied and attracted by the treatment he receives, business is lost and the company languishes, unemployment for the worker being one of the results.

Second in importance in the management of the business for the best results to the stockholders is the older and trained employee, an asset to any industry, who can only be replaced, if at all, by one with a background of a generation of similar training and education.

Third in importance must be placed the capital contributed by the stockholders, which, although first in the order in which the company is built up, is the most easily replaced when impaired; and furthermore, by weighing the interests in the order stated, the stockholder is really given the best and truest consideration for the safeguarding and building up of his interest.

The interests and requirements of the customers are so evidently the concern of all employees and the effect of their neglect so quickly noticed that there is little difficulty in correcting deficiencies in this part of industry's operation.

The maintenance of proper relations between employer and employee, comprising as it does the training, handling and disciplining of all employees in such a manner as to keep them satisfied and to bring about the most effective production relationship to industry, is a much more intricate problem and, as previously stated, is the most important and difficult one with which those in responsible charge of a company are confronted today. It is too soon to speak with confidence of the part played by the joint conference committee in solving this problem, and like many other problems, whether it is a pronounced success or a total failure will depend upon the manner in which it is handled. Enough evidence is at hand to show that a great deal of value, both to the employer and employee, has come from the establishment of a relationship co-operative in its character and educational to both parties at interest. This relationship having been established, labor can play a large and important part, of tremendous value to itself and the consuming public, of which it forms so large a part, if it will adopt a broader attitude than it has heretofore assumed and concern itself not only with those things which will further its own narrow interests, but also and principally with those which are of the most benefit to all connected with the industry, in the development of which labor should be an important and constantly increasing factor.

The Limit of Co-operative Effort

I have stressed the importance of co-operation between employer and employee. In certain directions there is no limit at which such co-operative effort should stop; in others, however, there is a limit beyond which it is not only unwise to go, but positively injurious, alike to employer and employee, and consequently to the public which both must serve. There is much loose talk among men of high standing, but generally with very limited experience in industry, about the democratizing of industry and giving the men a share in the management of industrial properties. To the extent of a co-operative effort between employer and employee to improve working conditions, or in fact to better any of the situations in industry that are unsatisfactory to the employees, such as wages and hours of service, well and good; but I maintain that the limit has been passed when enthusiastic reformers advocate giving a voice in the financial and business management to the workman, who is not responsible for bringing the industry into existence and has no responsibility for the operating results, whether profitable or unprofitable. While many managers have come from the ranks and there is no limit to the possibilities of advancement for the workman, a responsible management is needed to provide for the development and even existence of the industry, a result on which depends not only the interests of the many owners and the public served, but the employment or non-employment of the wage earners themselves. The fallacies of socialism might easily destroy the entire structure, the condition of Russian industry today being an evidence of their effect. Attempts to formulate new social creeds, sometimes undertaken by reformers and those interested in social welfare, are dangerous, as the relations of the different elements of which our social structure is composed are so intricately interwoven that generalizations are almost always wrong in their application and may easily do a great deal of harm.

The prohibition of child labor, for example, appeals in principle to everyone as a good and necessary law, and so it is when used to prevent the exploitation of children in industry to their disadvantage or for gainful purposes. This law, if formulated by those of little experience in industry, may, however, be made so restrictive in its application that children will be deprived of all contact with industry and the work-a-day world, thus making it impossible for them to receive that training and experience early in life that so many of us recognize as the most valuable part of our own early education. It may be said that of the children gainfully employed in the United States, about two-thirds are engaged in agriculture, forestry and animal husbandry (principally in the South), and

less than one-fifth in manufacturing and mechanical industries. The total number of children employed in all occupations decreased from two million in 1910 to one million in 1920. We see that the tendency is in the right direction. Let us, therefore, not push this or other similar laws, by unwise enthusiasm, to limits which will result in harm to those whom we all desire to benefit.

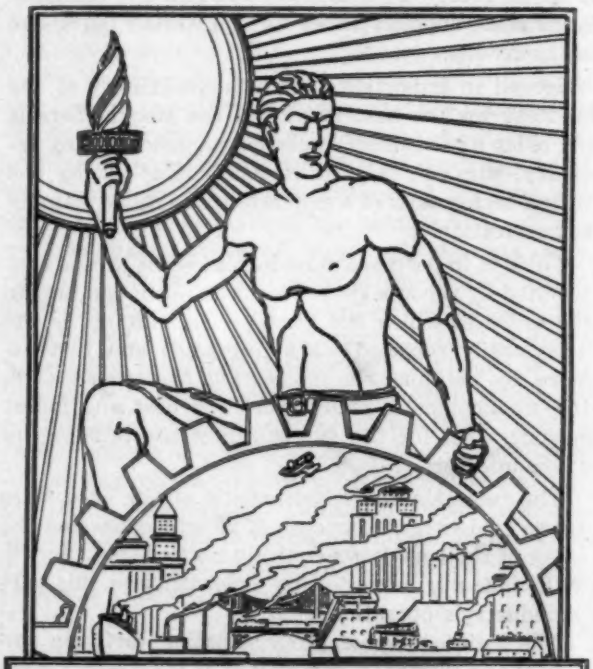
We must not fail to recognize that, in all attempts at reform, care must be taken that in our efforts to bring about changes which appear desirable on the surface, contact is first made with those who are in responsible charge of the situations it seems desirable to change, to the end that such changes may be recognized as desirable by those who can most naturally bring them about. It will seldom be necessary to go further if this first step is well taken and the reforms recommended are really wise and good.

The Improvement Attained in Man's Welfare

I have confined my remarks largely to the manufacturing industry in the United States and have only touched on a very few of its problems. The manufacturing industry is, it is believed, one of which we can all be proud. Its growth during the last half century is one of the greatest achievements in history for improvement in the welfare of man. We can be proud of this growth because it has been accomplished along broader lines than any similar movement in history. This statement can readily be proved by a comparison of the condition of the laboring class today with its condition fifty years ago. Not only are their real wages—that is, not only is the purchasing power of their wages—much greater than ever before, but they are proportionately greater than any increment which capital is receiving. The labor value of the employer's dollar—that is, the value of the dollar in buying an average hour's work—has shrunk from 100 cents in 1914 to 44 cents, and in addition the employer must bear the comparatively greater proportion of the increased taxes. In 1923, considered a prosperous year, of the manufacturing corporations as a whole, 37 per cent reported a deficit in earnings. The improved condition of the workman has been brought about not by longer working hours and greater manual effort on the part of labor, but by shorter working hours and by the use of labor-saving devices to an extent many times that which was possible at the beginning of this period.

The wage earners' real wages, as stated above, have enormously increased while working hours have decreased, and working conditions, as affecting comfort and safety, have improved in every direction. Employers are spending a large and increasing part of their returns for the welfare, education and protection, by insurance and in other ways, of employees and their families. The purchasing power of wages in the United States is the highest in the world. In southern Europe it is a quarter to a third of our standard; in England about one-half, and in Canada about three-quarters.

It is the personal touch that wins in Safety. Show men you are interested in them and they will respond in the right way. Even the chronic grouch and the hard-boiled safety scoffer can be won over and converted into boosters with a little patience.—National Safety Council.



I AM INDUSTRY*

By Bennett Chapple

I am Industry.
My eyes light the way of civilization.
My footsteps are the march of progress.
My arms encircle the universe.
I sweep the dizzy heights with aeroplanes.
I dig the earth for its treasures.
My song is the hum of whirring wheels.
My laugh is in the happy hearts of men who toil and sweat, unafraid.

I am Industry,
Creator of a new day and age.
I reach on toward new glories, new understandings, and new achievements.
So long as men have faith and courage and vision, I shall live.
Without these, I am but the husk of circumstance.

---

* This prose poem, written by Bennett Chapple, director of publicity for The American Rolling Mill Company, Middletown, Ohio, and president of the National Industrial Advertisers' Association, was read at a recent meeting of the Chicago Advertising Council, and is published herewith through the courtesy of Class.

Relief for the Taxpayer

Equitable Adjustment Is the Intent of the Law

By M. P. SNOW
Public Accountant and Tax Consultant

THERE are a great many concerns in the United States who do not know that there are such things as relief provisions in the tax laws. As a matter of actual fact, for the years 1917, 1918, 1919, 1920 and 1921, it is possible for any concern which has been assessed a tax which the Government considers "disproportionately high" to obtain a recomputation of its taxes based on those paid by other companies of similar size and business.

A "disproportionately high" tax is not the only grounds on which relief may be obtained. If the commissioner of internal revenue, who has jurisdiction of all federal taxes in this country, is unable to say what a concern's invested capital is, he may compute its tax on the basis of what other and similar concerns have paid. There are also certain other conditions under which this relief may be obtained but they are not important so far as this article is concerned.

Really, the principal condition under which a concern might qualify for this relief is that of having paid taxes higher than others similarly situated.

In specifying just what things shall be used as a basis for recomputing such a concern's taxes, the tax laws say that they shall consider a number of other "representative companies" and base the computation upon the average gross income, net income, capital, amount and rate of war profits or excess profits and certain other pertinent facts.

Now, as one who was in Washington when these very relief measures became laws, I would say that the intent of Congress in passing them was to try to remedy a condition which under the excess profits tax laws threatened to put a distinct handicap on those whose more successful business management and foresight enabled them to make more money than other concerns on a given amount invested.

To correct this situation Congress made it possible for such a concern to pay taxes according to what an average of other concerns of similar capital and earnings paid.

Intent Behind the Law

Several hundred words are expended by the tax laws in describing the way the "relief provisions" shall work and just who may obtain relief. Then there are literally hundreds of opinions, decisions, rulings, etc., bearing on this point. There is so much opportunity for leeway in the tax unit's treatment of these cases that the subject has become complicated by means of a veritable horde of decisions of one sort or another.

However, the thing which determines the action of the tax unit in ruling on such cases is the intent behind the actual law. What did Congress actually have in mind when it provided these relief measures within the body of the tax laws?

Obviously, it intended that where the existing taxes threatened to work distinct injustice against certain companies, that these protective provisions should be exercised in order that companies so affected should have their taxes adjusted on a basis which would be entirely equitable.

This is the second of a series of articles dealing with recent tax decisions, knowledge of which is worth actual dollars and cents to readers of this magazine.

While these stories will for the most part deal with decisions favorable to the taxpayer, it must be remembered that they are not to be construed in any sense as being antagonistic to Uncle Sam's tax administration. They are designed to be used as guides for the man who is not a specialist in tax matters. It is important that the taxpayer take advantage of every privilege or opportunity accorded him under the tax laws. The function of these stories is to advise him of those privileges, ignorance of which so often costs taxpayers large sums of money.

An arrangement for free tax and accounting counsel from the writer of this series has been made for the benefit of our readers, and this service will hold good for the entire duration of the series.

Steps Toward Getting Relief

Among manufacturers there have been plenty of cases where taxes paid by one concern are considerably higher than those paid by others of similar size and in the same line of business. Let us say, for example, that a certain manufacturer paid 50 per cent of his income in taxes in the years 1917 to 1921 inclusive. This is a very high percentage for any industry. How would this manufacturer obtain relief from what he considers an unduly high tax?

The first step is to make a claim for refund based on a tax recomputed by the Government in accordance with that paid by other companies.

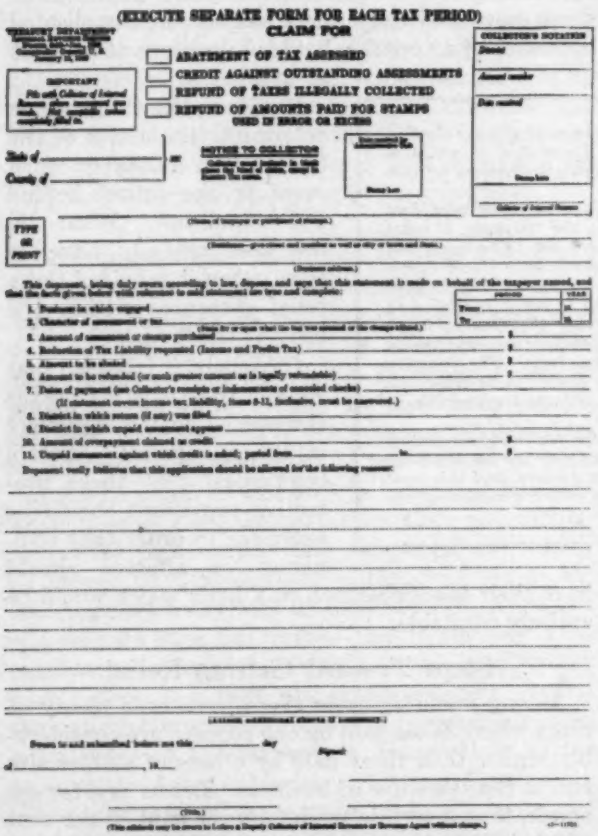
With this claim should be filed a brief or argument supporting the contentions of the taxpayer that he is entitled to consideration under the relief sections of the tax laws.

The argument should be particularly strong in emphasizing actual points of law, although the human element is never to be discounted in such cases. In other words, first make sure that the relief provisions of the law actually do apply to your case, and that unless protected by them you have paid a tax out of all proportion to what you should pay in comparison with others. Then bring in to the Gov-

ernment every available fact tending to show that you are entitled to protection under these special parts of the tax laws.

Administration Deals Fair

Let me say here that the Income Tax Administration has been very just in its treatment of "relief cases." If a concern can show for any of the years now open from 1917 to 1921 that it has paid taxes which are unduly and unjustly high, there is a good



(EXECUTE SEPARATE FORM FOR EACH TAX PERIOD)

CLAIM FOR

- ABATEMENT OF TAX ASSESSED
- CREDIT AGAINST OUTSTANDING ASSESSMENTS
- REFUND OF TAXES ILLEGALLY COLLECTED
- REFUND OF AMOUNTS PAID FOR STAMPS USED IN ERROR OR EXCESS

IMPORTANT

NOTICE TO COLLECTOR

COLLECTOR'S NOTATION

State of ..... } ss:
County of ..... }

TYPE OR PRINT

This document, being duly sworn according to law, deposes and says that this statement is made on behalf of the taxpayer named, and that the facts given below with reference to said assessment are true and complete:

PERIOD — YEAR

1. Business in which engaged .....
2. Character of assessment or tax .....
3. Amount of assessment or charge protested ..... $
4. Reduction of Tax Liability requested (Income and Profits Tax) ..... $
5. Amount to be abated ..... $
6. Amount to be refunded (or such greater amount as is legally refundable) ..... $
7. Dates of payment (see Collector's receipts or Indorsements of canceled checks) .....

(If statement covers Income tax liability, items 8-11, inclusive, must be answered.)

8. District in which return (if any) was filed .....
9. District in which unpaid assessment appears .....
10. Amount of overpayment claimed as credit ..... $
11. Unpaid assessment against which credit is asked; posted from ..... to ..... $

Deponent verily believes that this application should be allowed for the following reasons:

Sworn to and subscribed before me this ..... day of ....., 19....

Affiant

(Title.)

chance that Uncle Sam will give thorough consideration to the case and, if justified, grant the claim. Such concerns as have presented their cases before the Board of Tax Appeals and have received consideration by the board in connection with these relief measures of the law, have also been accorded very careful and thorough consideration. It is evident, however, that the board is taking the same attitude as the tax administration in that a concern must definitely prove that it comes under one of the conditions provided by the tax laws by which concerns may have their cases reconsidered and recomputed, based on what others have paid. Only a short while ago the board allowed a case where the concern had had difficulty in ascertaining its invested capital. As a matter of actual fact, the board found that this concern could not actually determine its invested capital and that the commissioner could not do so either, so the board granted the concern consideration under the relief section of the law.

A great many more concerns which have paid excessively high taxes would undoubtedly be interested in the possibility for having their taxes recomputed if they knew that in many cases even the heavy tax years—1917, 1918 and 1919—are open and are not outlawed as commonly supposed.

There are several things which operate to hold open these years. A waiver filed at the proper time for each of the years will keep these years from being outlawed. Claims for refund filed before the statute has run will operate to hold open certain years at least to the extent of the amounts involved in the claims.

But the thing, according to my experience, which holds open most of the cases is the fact that under the 1924 Tax Act the provisions in regard to refunds are different from those in any of the other revenue laws. Under previous revenue laws a concern was given five years from the time its return was due in which to file claim for refund. The tax law of 1924 provides that claims may be filed within five years from the time the return was due or **within four years from the time the tax was paid.** This means that if you paid an additional tax for 1917 as late as, let us say, 1922, the year 1917 is open for claims to the extent of the additional amount of tax you paid in 1922. Of course this holds good for each one of the years.

Recently there has come to my attention some cases where additional assessments were made for almost every year—that is, for 1918, 1919, and 1920—as late as 1924. To the extent of these additional assessments, claims are still good for these years.

Care Necessary in Filing Claims

One thing should be kept in mind by those who read this article. Claims should not be filed in a haphazard fashion. Your claim is your personal approach to the Government and you should make it as convincing and forceful as possible. I do not recommend the wholesale filing of claims for refund. You should be satisfied that you are affected by the relief provisions of the law, for example, before you start to make up claims on the basis of these protective parts of the revenue laws. You should also be sure that a certain year is not outlawed before you file claims for that year.

One thing will be of particular interest to those in the manufacturing field. The Government may not assess you a higher tax than you originally paid because of your appeal for relief. In other words, your appeal for relief may not be turned back on you in the shape of a higher tax.

Noah was the only man who successfully floated a stock company while the rest of the world was in liquidation.

Foreman Training in the Paper Industry

Part IV—State Foreman Training Programs

By J. K. NOVINS

Author of "A Training Program for the Factory Foreman," "Foreman Training in Practice," "Manual of Practical Training for the Railroad Foreman," etc.

The Michigan Experiment in Foreman Training

IN THE state of Michigan foreman training has taken on several interesting developments, worthy of the attention of all executives interested in any aspect of the subject. First, in Michigan, foreman training has developed as a definite function of the state and local educational institutions. Second, industries in Michigan have taken matters in hand, and fully realizing the need for foreman training in the plant, have made demands on public educational officials to institute permanent programs of foreman training to serve local industry and to help develop future leaders of foreman training in the individual plants.

A prominent educator in Michigan recently made the statement: "It is just as much a duty of a local board of education to provide classes for foremen as it is to provide them for machinists, printers or draftsmen. While the state or university may aid in the development of the work, the responsibility for providing adequate training is essentially a local one."

This principle has been carried out on an extensive scale in Michigan, and therein the experiment of Michigan in the field of foreman training differs from the programs developed in other states, as described in previous articles. In Grand Rapids, Michigan, a thriving industrial city, foreman training has become a definite function of the Board of Education.

"I believe," Mr. Arthur F. Dodge, who is in charge of foreman training in that city, recently told the writer during the course of an interview, "that Grand Rapids is the only city where foremanship training is tied up with the vocational school and it is my opinion that this is an ideal condition. One of the biggest causes of failure on the part of the schools, and especially vocational schools, is their lack of contact with industry. Foremanship courses can give the school this contact."

Local Industry Takes Action

The development of foreman training in Grand Rapids, as an organized means of serving local industry, grew out of the organized efforts of Grand Rapids industries. The idea first saw light when the Rotary Club of Grand Rapids invited Professor George E. Myers, of the University of Michigan, a leader in the foreman training movement, to address the local businessmen on the need for such training. The Grand Rapids manufacturers were passing through a period, during which, in the words of Professor Diamond of the University of Michigan School of Education, "manufacturers were searching frantically for any scheme which would insure them a reasonably contented working force. Numerous devices to secure the full co-operation of their workers, such as shorter hours, higher wages, and better working conditions, had been tried without much success."

This series is a manual on the subject of foreman training, and as such is replete with valuable suggestions for the installation of a foreman training course in the paper industry.

Part Four contains seven chapters, of which the one herewith is the sixth. "How Foreman Training Is Promoted in Eastern States" will appear in the next issue.

The author of this series is available to answer any inquiries regarding any phase of foreman training on which the reader might wish to be enlightened.

At the request of the manufacturers and executives present at that meeting of the Rotary Club, Professor Myers arranged a series of weekly meetings with a small group of factory managers and superintendents to determine upon an organized foremen's course for Grand Rapids industries. Professor Thomas Diamond of the University staff took care of this work for two years, after which time, having proven its worth, it was taken over by the Board of Education of Grand Rapids, at the request of the local manufacturers, as a regular part of its local vocational training program.

The Board of Education secured for the work Mr. Arthur F. Dodge, an educator of practical experience in vocational work. At one time he had been principal of a high school. During the war he had been employed by the Emergency Fleet Corporation to train instructors for the various ship yard trades. Later he took charge of foreman training work at the U. S. Rubber Company plant. Mr. Dodge truly illustrates the fine type of men that have during the past few years been attracted to foreman training work.

Plan of Instruction

The foreman training courses conducted by Mr. Dodge have been attended by foremen representing

the large factories in Grand Rapids, with instances of men coming from other cities once or twice a week to attend the classes. Mr. Dodge has divided the subject matter into three distinct courses, which must be taken in their order by the foremen. The first course is a short introductory one of approximately seven meetings, covering factory organization, cost of manufacture, duties of foreman and the handling of men, but does not take up technical problems. The second course is largely technical, and is designed for foremen of special trades. The third course deals with the supervisory and managerial aspects of the foreman's job. The foreman's job is

Class for foremen conducted in a Grand Rapids plant by Mr. Arthur F. Dodge, foreman training instructor and organizer employed by the Grand Rapids Board of Education, to serve Grand Rapids manufacturing industries

analyzed, an organization chart of the various factory departments and the foreman's duties and responsibilities is drawn up, and the rest of the subject matter taken up deals with such phases as stock storage, layout of equipment, moving goods, scheduling, production records, wage systems, labor turnover, industrial welfare work, training of green workers and various other phases of production incentive.

"In Course II," Mr. Dodge explained, "I do not attempt, however, to go very deep into technical problems, as this would be absolutely impossible in a course of this kind. The purpose of taking up the subjects as indicated in Course II is simply to give foremen a better understanding of methods used outside their own department. Course III is a purely management course, no technical problems being taken up, whatsover. In this course we take up in as much detail as possible the problems that would be taken up in any course in factory management.

"It is my belief that a short introductory course in management, such as Course I, gives the foremen a bird's-eye view of management problems. Course II gives them more of the details of management in their own particular plants. After these preparatory courses, they are then properly fitted to attack the problems taken up in Course III, which is the management course proper, with more intelligence.

"Foremen from a great variety of industries have taken our courses, but in every case we attempt to divide them into homogeneous groups. Most of my classes are carried on at the local factories, sometimes on company time but mostly on the men's time. Where the classes are carried on at the factories, the classes are necessarily homogeneous.

"The meetings for the courses are held once each week, either immediately after work or in the evening, and in some cases on company time. The length of the meeting is one hour when held immediately after work, or an hour and a half when held in the evening or on company time. The text material is presented to the men the week before that particular subject is to be taken up for discussion.

"At the end of each course, simple card certificates are presented to the men who have completed the course with an attendance record of 75 percent or more, and a diploma signed by the Superintendent of Schools and the President of the Board of Education is presented to all foremen who have completed the three courses with an attendance record of 75 percent or more in each course.

High Attendance Record

"As to the accomplishments of the foremanship training," Mr. Dodge continued, "it is my opinion that it is practically impossible to measure definitely the results of an educational work of this nature. Any results which I might attribute to the course might easily be attributed to other causes such as coaching by the superintendent or the educational work of the factory industrial relations department. The opinions of the foremen who have taken the courses and the opinions of the superintendents and managers of the plants where courses have been given are certainly an indication of the value of the courses. There is no superintendent or manager who does not believe that the courses have been of value.

"At one time I attempted to take promotions as a basis for measuring the volume of the course. At this time, I found that out of a group of twenty-four men, six had been promoted. Attendance records of these six men averaged 92 per cent of the course. Attendance records of the foremen who had not been promoted averaged 86 per cent for the course.

"At another time I attempted to measure the value of the courses through reduction of labor turnover, but so many factors affect labor turnover that I could not conscientiously claim credit for the reduction.

"The high attendance records were certainly an indication that the men who are taking the courses appreciate their value. For example, Course III given at the school evenings from 7:15 to 8:45 showed an average attendance record of 92 per cent and all of the men who started the course completed the course with an attendance record of 75 per cent or better."

At the graduation last year, fourteen foremen took their certificates, indicating completion of the three courses.

An interesting feature of the foreman training

work carried on by Mr. Dodge at the Grand Rapids Vocational School, is that in addition to specially prepared text sheets, the foremen-students made use of clippings from trade magazines as references in connection with discussions on particular factory problems.

Foreman Training in Detroit

A similar program, though different in scope, is carried through at Detroit by Mr. E. Lewis Hayes, a member of the University of Michigan staff. He is also connected with the Detroit School System. Recently he conducted a foreman training course with ninety men from various industries in his three classes.

"The plan in Detroit," Professor Myers told the writer, "is to develop from these classes a few men who will be able to do the actual foreman training work next year and in the future, either in connection with the city school system, or in the industrial plants with which they are connected."

In Detroit, Mr. Hayes worked out the foreman training course in co-operation with the Employment Managers' Association of that city. They desired that special stress be laid on economics. An interesting prophetic statement was recently made to the writer by Mr. Hayes. He said:

"I believe that in the future it will be necessary to offer courses in foremanship training to men who are sent in by the companies to take this work preliminary to being given such positions or immediately upon being given such a position."

His method of conducting the instruction, Mr. Hayes described as follows:

"Each topic is thrown open for discussion in the class and we summarize the conclusions and list them for their use. Our group was not arranged according to industries. A foreman would have widely diversified interests. The program that we have outlined has a content of interest to foremen on almost any job. We have not tried in this course to take up the technical subjects. These should be covered, I believe, in other classes. We use almost entirely the group discussion method. The men meet once a week for two hours. They are picked by the employment managers and superintendents. We lay particular stress on the foreman learning to analyze his job before attempting to teach the workmen."

Other Industrial Centers

Foremen training courses to reach industries in other centers than Grand Rapids and Detroit, are promoted directly by the University of Michigan School of Education.

"More recently," Professor Myers, head of the Vocational Education Department of the university, said, "this department has done some work in the foremen training field in other cities of the state. Last October to December our Mr. Diamond met groups of foremen each week in Saginaw, Bay City, Jackson, Battle Creek, and Holland, there being over three hundred men in these classes. We have requests from these cities to continue this work next fall and winter, and shall probably be able to continue part of it."

The writer asked Professor Diamond to outline his work in the centers mentioned by Professor Myers. Professor Myers replied that the classes which were organized in these industrial centers included foremen from a number of small plants as well as from the larger industries.

"We have no fixed rule for classifying the men," he said. "Some of our groups were brought together because of their common interest in the problems of their factory; other groups associated because of their common interest in a particular trade; while still other groups were made up of a miscellaneous collection from the smaller factories. My personal opinion is that the most desirable method is to classify them strictly according to their trade interest. However, this cannot be done in every case as the men from one factory may be more interested in the problems of their factory than they are in those of their specific trade. Because of this, and because of the fact that we have so many small plants which are difficult to classify, I believe we shall have to continue with the three types of classes.

"We urge that the men in each community form what have become known as 'Executive Clubs' for the purpose of bringing together the men from the different factories.

"We have found it almost impossible to get many of them to actually study books or text material. We have no difficulty with those who will read at home or who will go to the library, or who will actually work out problems for presentation to the class. We have tried to stimulate thought and discussion, if not organized study, on the part of the others by giving out a sheet of questions on each topic at least a week before the topic is dicussed. We find that the men will look over the questions and that they will discuss them in the factory with the result that when they come to our meetings they have already formulated some ideas on the question being discussed. This idea is not put forward as a solution to the problem, but merely as an aid in provoking thought on the part of those who have never learned to study or are too indolent to do so."

Besides the work of actually training foremen, Professor Myers devotes his time to training factory executives to conduct foremen training in their individual plants.

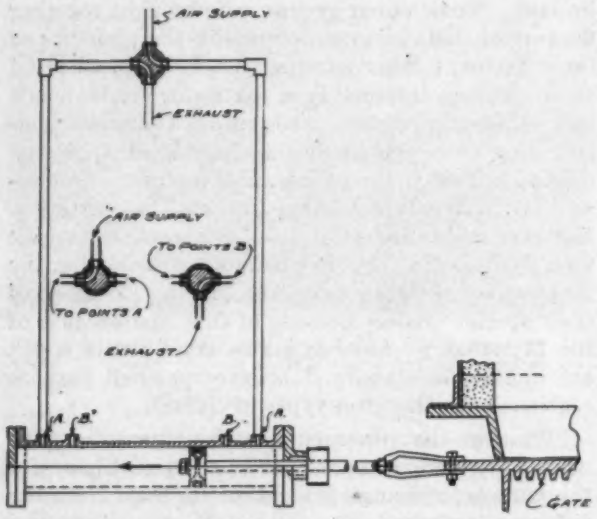
In determining the size of boiler feed pump for a plant, the capacity should be 100 per cent above the normal rating of the entire boiler equipment. As an instance: for a 2,000 rated horsepower station the pump should have a capacity of 4000 horsepower, or about 250 gallons per minute.

Pointers for the Engineer

By W. F. SCHAPHORST, M. E.

Simple Ash Hopper

PAPER mill engineers who have considerable ashes to handle will be interested in this sketch of the simple mechanism connected with an ash hopper dump as actually used in large power plants in the eastern part of the United States. The drawing has been made so distinct and complete that there is almost nothing further to be said about the design in words.



The sketch shows a section through a part of the ash hopper itself. Just below the ash hopper is the gate which is held in position by means of guide angles. This gate is pulled open and is then closed by means of compressed air, the air cylinder being shown in section at the left.

Air is admitted into one end of the cylinder by simply manipulating the four-way cock as shown on the top at the left. This cock is so designed, as shown, that when in one position the air admission and air exhaust are in correct position for shoving the gate in one direction. Then by swinging the four-way cock through 90 deg. the position of the four-way cock is turned for pulling the gate in the opposite direction.

The sketch also shows the cross section through the valves themselves and also through the air cylinder showing the piston in the cylinder, the piston rod passing through the stuffing-box, and the connection with the gate.

This system is being operated with entire satisfaction and has already been copied by a number of large power plants which certainly speaks well for the method.

Monel Metal in Steam Traps

A PAPER mill engineer who had experienced considerable trouble with the steam traps in his plant recently developed a trap that operates on what he considers more "practical" principles. He contends that when a steam trap is open, it should be wide open, and when it is closed, it should be TIGHT so that there will be no leakage. Besides, the trap should be as simple as possible.

It appears that he has developed a very good trap. Instead of using the common type of valve, this trap is provided with a ball and seat, both of which are made of Monel Metal. He has made them both removable and easily renewable.

There can be no wire drawing in this trap. As the water in the body of the trap rises, the float rises also, much like other traps, but the valve does not open immediately. The designer purposely made an amply large cage for holding the ball so that there is about an eighth of an inch "lost motion" or "play" between the ball valve and its cage. When the float reaches its highest position, the cage suddenly pulls the ball away from its seat. The closing operation is just the reverse of the above.

The use of Monel Metal is making very rapid headway in paper mills due to its excellent resistance to corrosion. This writer can think of no metal better qualified for the important working parts in a steam trap than Monel Metal. Because of the acids used in paper mills, and the unavoidable wetness, corrosion has heretofore been considered a necessary evil. There is no question but that Monel Metal is the solution to many if not all of these corrosion problems.

Setting Boilers Near Fire

NOT long ago I read a complaint by an engineer regarding modern boilers being set too high. He thinks we are overdoing a good thing and that boilers should be set lower. It reminded me of a letter I once wrote purely in a spirit of fun, suggesting that boilers be placed right down in the live coals because "that is where the heat is most intense." At least that is the argument I used. I pointed out that when a blacksmith proceeds to do a job of welding, he doesn't place his iron several feet above the fire, but he places the iron directly "in" the fire, because it has been his experience that "in" the fire is where the fire is hottest. Therefore, I concluded, "there should be no space between the live coals and the boilers, but the boilers should be buried in live coals."

After the publication of this letter, which I intended to be humorous, I received a personal letter

from a gentleman who claimed to be an inventor. He wrote me very seriously that he had had that same idea himself and was working on it, but that a colored man who was in his employ left his services, and he imagined that the colored man had imparted the idea to me, and therefore the idea was still his own and was still patentable in spite of my "description" of it. I do not claim any patent rights. If the idea is patentable, any reader is welcome to it—I don't want it.

My honest opinion is that there is little danger of placing boilers too high above the grates. It is logical that space is needed so that combustion will be complete before the boiler surface is touched by the hot gases. It is better to place the boiler too high than too low. If the boiler is too high by several feet, it simply means that the boiler walls must be sufficiently well made so that the heat losses will be reduced to the minimum and so that there will be no inleakage of air. If the boiler walls can be constructed so well that there are no heat losses whatever and so that there is no inleakage of air, there is practically no limit to the height to which the boiler may be placed without loss of efficiency.

There are so many factors that enter into boiler heat transfer that it is quite possible to get poorer evaporation even with better combustion. Good combustion cannot overcome the evils of soot and scale. Nor can good combustion overcome a great many other things which would require considerable space for mentioning and which are well known to most paper mill engineers.

Pulverized Coal Information

SOME of the foremost research engineers in the country have been giving much time and thought to pulverized coal during recent years. The following "conclusions," published by members of the American Society of Mechanical Engineers in their journal Mechanical Engineering, will certainly doubtless be of interest to paper mill officials who are contemplating the use of pulverized coal:

"This analysis of boiler furnaces for pulverized fuel indicates that for highest efficiency and maximum capacity:

"(A) The coal should be thoroughly dry, and be finely ground and preheated before admission to the furnace.

"(B) The air entering the furnace should be highly preheated, and this can be done best by flue gases, although there are possibilities in the use of bled steam.

"(C) Turbulence should be maintained in the furnace to insure rapid combustion and high efficiency.

"(D) The furnace walls should be water-cooled, preferably with all-metal walls. This construction insures low boiler outage, low maintenance and high efficiency of heat transfer. Water-cooled walls with brick facing may be desirable with certain fuels.

"(E) Improved methods should be developed to handle ash from any coals, and the discharge of dust and smoke from the top of all chimneys should be reduced.

"(F) To secure increased furnace capacity and at the same time secure higher boiler efficiency, more b. t. u. per cu. ft. of furnace volume must be developed. This is possible by employing the factors noted above."

Cost of Electric Motor Burnouts

I HAVE received several inquiries concerning my remarks on the above subject, which appeared in the June, 1925, number of THE PAPER INDUSTRY. One of the inquirers wrote: "I would like to know what sort of protection against overloads was provided for the motors in this particular installation. It seems that the protection is an important factor in the determination of the frequency of motor burnouts, and that in order to save the cost of rewinding, adequate protection should be provided. According to your figures, the average rewinding cost is $83.80, which is much less than the cost of first-class motor protection apparatus. I desire this information in order to make more complete the data from your article, and I would thank you for an answer at your convenience."

No effort is made in the large plant to which I referred to get overload protection. They protect only against a stalling current or short circuit. In some special cases they do differently, but this is the general rule.

One of the most abstract problems facing the officials of a manufacturing plant such as a paper mill is the cost of any breakdown, whether mechanical or electrical.

Usually an electrical breakdown cost can be ascertained by determining the number of hours or days that the electric motor or generator is out of service. In rewinding small motors of from ¼ to 10 H. P., one can usually figure a day and a half to two days, while from 15 to 40 H. P. would take two or three days, and above this size would take three days to a week.

Any mill using a quantity of electric motors of various sizes should keep enough spare motors on hand to use as substitutes when one of the regulars are burnt out or for some reason taken out of service. Although their problems are not exactly the same as paper mill problems, here is an example: Two large automobile manufacturing concerns have standardized on certain motors of so-called "300 frame series." When a 10 H. P. motor is burned out or the bearings become worn and need repairs, it is taken off the rails and another motor of the same frame size put in its place. The machinery is probably tied up twenty minutes to half an hour by doing this. Both companies have at least one spare motor of every frame size which they use throughout their plant.

Editorial Comment

By WILLIAM SIBLEY

How Aviation Will Reduce Inventories

WITHIN the past month Captain Eddie Rickenbacker, Ace of American Aces, addressed one of the luncheon clubs in Chicago. During that talk he said:

"I firmly believe the aeronautics will become the largest industry in the world in the short period of twenty-five years. That belief is founded on the knowledge that aviation is just another form of the most basic of all commercial factors—transportation. At the present time our major forms of transportation are the automobile, railroad and merchant marine. With the possible exception of the excessively heavy freight, there is nothing carried by any one of them that cannot, even now, be transported more cheaply, time considered, by air. Take from the existing systems the distance travelers, the mail, express and a new form of light freight that will be developed, and you have the basis on which aeronautics will be developed and the reason for my prediction.

"Compare your inventories of today with your inventories of 1900, and you will find that you are carrying far less stock now than formerly—merely because transportation facilities have been greatly improved. Through the development of aviation you will be enabled to still further cut your inventories and stock on hand,—and that will obtain for both distributor and manufacturer. Result: So great a saving of interest on invested capital, and so much more rapid turnover given to capital, that you will be glad to pay a slight advance in transportation costs.

"Our present system of railroads, which have been fifty years in the making, can, and will be paralleled by airways within the next five years. This is because such lines can be established at a cost not to exceed one per cent of the railroad equipment. No intervening equipment is needed for the air service —merely a station at either end of the way. Every principal railroad in the United States will be paralleled by air service by 1930.

"As an offensive or defensive weapon, there can be no comparison with it. The nations at war in the future will win or lose in accordance with their preparedness in aircraft—in accordance with their ability to demolish the supply and financial centers of the enemy within twenty-four hours. On the other hand, the blending of national thought—the correction of racial misunderstandings—the development of world-wide goodwill, which must naturally come through the annihilation of transit time and distance —these are the things that are going to make the developed aeronautics of the future our second most powerful agency for peace. Airplanes, of course, cannot go with the speed or accuracy of radio. But better than radio, they can take personalities as well as messages to other countries. These two agencies will do more to effect universal goodwill and peace than all the Hagues, Leagues, or World Courts of all time."

Employee Facilities

GOOD drinking water, modern wash and locker rooms, and adequate toilet facilities are necessities to sustained production. Many states have enacted laws requiring adequate sanitary installations, and these laws should be kept in mind when an installation is planned or modified.

A plentiful supply of good, cool, drinking water, located at convenient points, is most essential. If the purity of the water is in question, a careful water analysis should be made, since many diseases can arise from impure water. If plants using city water supply, these precautions are not so imperative as where river or well water is used.

A few extra dollars spent on sanitary toilet fixtures will be found a profitable investment because modern facilities can be kept clean and attractive with the minimum of attention. Another plant facility of great value is the locker room. Often a worker is in constant anxiety during working hours lest some of his personal effects are lost or being molested. The provision of suitable lockers, preferably steel, is a profitable investment. Lockers having sloping tops prevent the accumulation of rubbish, while doors of screen permit good ventilation.

Where locker installations are not feasible, coat rooms fitted with hangers and racks can be provided, but it is a good plan to keep such rooms locked during working hours. In some plants, ceiling clothes hooks are used, and each worker hangs his belongings on the hook, then hoists it to the ceiling where the garments are out of the way and safe.

Employees are quick to appreciate modern wash room facilities. The number of basins or faucets will depend entirely upon the nature of the work and size of the plant, but an adequate number should be installed to prevent loss of time in waiting turns. Only stands that can be kept clean should be installed.

——— on Timely Subjects

As roller towels are unsanitary, paper or electric towels should be used.

The necessity for strict cleanliness and careful maintenance of all plant facilities must be constantly emphasized. We have seen cases where modern equipment was installed, but where the conditions of the lockers, wash and toilet rooms were most unsatisfactory. Constructive training of employees to keep the facilities clean and orderly is always effort well spent. The management should provide ventilating systems for locker and other rooms, but it should be inculcated into every worker's mind that "it is up to him" to do his share in keeping everything shipshape.

Learning the Other Man's Methods

NEARLY every plant has a maintenance engineer. The duties of this individual are manifold, but in general they can be divided into four major classifications, thus: 1—To promote and maintain harmony among employees; 2—stop waste in whatever form; 3—see the need and make changes for the betterment of plant equipment; 4—to visit other plants in search of new ideas and to permit his foremen, on occasion, to do so.

Of these major duties, not the least important is the latter. Engineers too frequently stay in their own factory day in and day out, months on end, never visiting a competitor's plant or going near the establishment in the next block. Too often, competitors are regarded with suspicion, and the act of paying a visit to a competitive plant as "spying." The factory across the street, a member of an extraneous industry, is thought to be "different."

Adherence to such erroneous beliefs perpetuates isolation, and China is an outstanding result of isolation. The problems of power generation and transmission, heating, lighting, and ventilating, or machinery maintenance is very much the same regardless of where found.

The superintendent or maintenance engineer of a paper mill can learn much from the superintendent of a candy factory, and the superintendent of a textile mill would profit by a tour through a wood-working plant. In like measure, vice versa. The writer never saw a more convenient plant, from the standpoint of operation, than a sugar refinery in Pennsylvania. Regardless of his product, any wide awake engineer could pick up a baker's dozen profitable ideas on a visit to that plant. The same could be said of a furniture factory in Grand Rapids. The automotive industry has done more to teach industrialists the economy of mechanical handling and the value of inter-industrial co-operation than any other single industry in all history.

At just the time we begin to feel self-sufficient, the process of mental deterioration sets in. We can always learn from the experience of others—and we should always be glad to teach.

1926—A Year of Hard Work

AT NO time since 1900 has the real purchasing power of the American people been greater than it is at the present time. This is largely due to the conditions that existed during the last half of 1925. Unemployment is at a low ebb, and promises to recede still further. Conditions in urban and metropolitan centers are approximately 18 per cent higher than one year ago. Many agricultural districts have more money to spend than either one, two, or three years ago. Such good omens give business a powerful stimulus, the effect of which will be felt into June or July.

No one knows better than the salesmen the importance psychology plays in the maintenance of good volume. Past records coupled with present optimism form a powerful combination as a quota beater. But although business is good, the results will go to him who digs the hardest. Competition is severe and orders will not come of themselves. Originality, imagination, and hard work make up the triumvirate supreme in this business of quota filling for 1926.

* * *

In a boiler plant recently visited, the CO_2 recorder was seen to be out of commission. The engineer stated that it was not put in repair because "the d——d thing never worked right because it leaked." The "secret of success" with almost any recording instrument lies in the pipe lines. These must be absolutely tight at all times. A frequent and liberal application of shellac will cure many of the recorder ills. All instruments should be given a superficial inspection daily and a thorough examination once a week. This done, properly, they will return splendid dividends on the investments.

* * *

Only a scant 4 per cent of the American people are classified as having "very superior intelligence." Seventeen per cent are "superior," with 25 per cent as "average."

Meeting of Canadian Technical Section

Many Interesting Papers Presented and Followed by Lively Discussions

THE annual meeting of the Technical Section of the Canadian Pulp and Paper Association took place in Montreal on Wednesday and Thursday, January 27 and 28. The sittings were held in the Vice-Regal Suite of the Ritz-Carlton Hotel, the opening sitting being called to order by Chairman C. Nelson Gain, of the Canadian Vegetable Parchment Company, on Wednesday morning at 10 o'clock.

Finances in Good Shape

Following a brief but interesting report by the presiding officer, the report of the secretary-treasurer was presented. This revealed a gratifying financial position; for, though the balance in bank on December 31, 1925, was about $400 lower than the previous year and the disbursements were some $150 higher, the section did not have to call on the general association for any assistance, while during 1924, the latter had given grants to the amount of $1,150.

Committee Reports

As in past years, the reports of the various committees concerned with the numerous educational activities of the section (Committee on Education, Supervising Committee on Correspondence Courses, Joint Committee on Textbooks, Committee on Apprenticeship) gave rise to a very animated discussion, which showed in a striking manner the interest taken in and the importance attached to this phase of the activities of the technical section.

The Committee on Apprenticeship, of which A. P. Costigane was chairman, expressed the opinion that they had done all the missionary work that could be done by the Section and that it was now incumbent on the industry as a whole to take up the question. They therefore requested that they be dismissed. The report was adopted, but a motion was carried referring the matter back to the parent association and recommending that steps be taken to carry on the work.

President L. R. Wilson

American Associations Heard From

As there were present several members of committees of T. A. P. P. I. and the Superintendents' Association who are taking particular interest in the problem, they were called upon to express their views and state what had been their experience.

R. W. Jenkins, chairman of the Apprenticeship and Vocational Education Committee of the Superintendents' Association, declared himself in favor of the idea of interesting the mill executives so that they would offer some inducement that would stimulate the men to better fit themselves for their present positions and future advancement. The big problem was how to get the executives, the technical men, and the mill hands together, for each had a part to play.

Martin L. Griffin, chairman of the Apprenticeship Committee of the Technical Association of the Pulp and Paper Industry, held similar views. He considered that the technical men should try to get the superintendents to co-operate in inducing men to take interest in their work, and at the same time to train them so that they could ultimately fill executive positions.

Secretary MacNaughton Advocates Promotion from the Inside

W. G. MacNaughton, secretary-treasurer of the Technical Association of the Pulp and Paper Industry, was of the opinion that if the Apprenticeship Committee was discharged it should be supplemented by the Canadian Pulp and Paper Association, or else combined with the Education Committee. As a matter of fact, in his estimation, if one of these two committees were discharged, it would be better to dispense with the Education rather than with the Apprenticeship Committee, because vocational education could get along of itself better than apprenticeship could. The tremendous expansion of the industry in Canada had created a very serious problem as it was causing a great drain on the supply of trained men available. Moreover, the location of many of the big Canadian mills, which were situated in the wilds where towns had sprung up on account of the construction of the mills, added to the difficulty of securing the skilled workers required to operate them. The most convenient, and at the same time the most rational, plan was to have a system of promotion from the inside; so that if a mill expanded it would not need to go outside to find men capable and willing to fill important positions.

Reports on Schools of Papermaking

The report of the Institute of Industrial Arts showed that the enrollment had increased by 200 during the year and now stands at 792, eliminating those who signed up but paid nothing, and those who have definitely cancelled their courses or transferred them to others.

The School of Paper Making, at Three Rivers, P. Q., which is now in its third year, is developing in a most satisfactory manner, under the direction of Professor Fleury. At the time when it was founded, the intention had been to train young men who intended going into pulp mills; but since then its scope had been enlarged to provide for those already in the neighboring mills who desire to avail themselves of the benefits of the course. This naturally involved certain difficulties on account of shift work in the mills, and has required

that the courses given in the daytime should be practically duplicated in the evening. But in spite of the convenience of such a procedure, the instructors cheerfully consented to undertake the additional work required of them.

Status of Textbook Sales

R. S. Kellogg, chairman of the Joint Committee on Textbooks, reported that to date 12,483 copies of the books had been sold, of which 4,229 were sold during the past year. In addition, some 300 copies of special pamphlets of Vol. I had also been sold. The committee now has in hand a balance of $1,234.01 in the Canadian fund, $1,256 in the United States, and $5,888.90 in the royalty fund, with which it is hoped to take care of future revisions to keep the textbooks right up to date.

Remarkable Success of the Books

The success of these books has far exceeded the fondest hopes of the promoters of the project in 1918. The third volume has already gone through its fourth impression, and a fifth will soon be required. The other four volumes are either ready to go to press for a third impression or will be soon. Certain of the sections require revision to bring them into line with recent developments in pulp and paper mill practice, and it was hoped that the publishers might be induced to make a revision of these sections before the next impression, without having to revise the whole of the volumes as they had at first intimated.

French Textbooks for Quebec Mills

J. Newell Stephenson made an announcement of considerable interest to the mills in the Province of Quebec. For some time the translation into French of the textbooks has been under consideration. This work has already been done on Vols. I and II, and in order that it may be proceeded with, the Provincial Government has contributed $5,000. It is hoped that the translations will be completed without undue delay, and this will doubtless give a considerable impetus to educational work in the mills of the Province.

Commercial Questions Wanted by Miss Kiely

Miss Helen U. Kiely, of the American Writing Paper Company, suggested that some attention be paid, when revising the textbooks, to indicating how to overcome troubles and difficulties encountered in commercial practice.

In reply, Mr. Stephenson stated that when the books were being prepared he had requested a number of mills to send in samples of defective papers, with explanations as to the nature and cause of the defects and the methods by which they had been overcome. The response had not been very encouraging, but the Institute of Industrial Arts was endeavoring to cover this most important question in its courses.

The reports of the Committee on Chemical and Physical Standards, of the Committee on Wood Measurement, and of the Committee on Abstracts and Publications were read by title and adopted.

To License Professional Chemists

The chemists of the Province of Quebec have at present before the Provincial House a bill of incorporation, which would provide official recognition and legal status to professional chemists as defined in the bill. This matter was brought to the attention of the meeting by Professor Keay in view of the fact that the definition of "Professional Chemist" as worded at the time, was somewhat obscure, and might be interpreted as including laboratory assistants, sulphite cooks, acid makers, and so forth. The meeting was informed that it certainly was not the intention of the originators of the bill that such men should be included in the definition, and that the promoters would doubtless be willing to change the wording so as to make this point quite clear. A committee consisting of O. F. Bryant, W. G. Mitchell, and J. Newell Stephenson, was appointed to see that this was done and to follow the progress of the bill.

Press Felt Performance

Dr. E. A. Rees, of F. C. Huyck & Sons, Kenwood Wool Products, Albany, N. Y., then presented an excellent paper on "An Analysis of Press Felt Performance in a Modern News Mill." A number of interesting questions were put to Dr. Rees, but owing to their very nature it was impossible for him to answer them satisfactorily off hand. Mr. Stephenson therefore suggested that they be written and sent to Dr. Rees, who would answer them in writing, when both questions and answers could be published in the official proceedings of the meetings.

Rubber Covered Press Rolls

As the hour as getting late, Frederick A. Todd's paper on "The Manufacture of Rubber Covers of Press Rolls for Papermaking," was read by title only, and the same procedure followed as to questions and answers as was adopted in the case of Dr. Rees' paper. Mr. Todd is connected with the Canadian Consolidated Rubber Company, Ltd.

WEDNESDAY AFTERNOON'S SITTING

The first paper in the afternoon sitting was that of R. N. Miller, of the U. S. Forest Products Laboratory, Madison, Wis., on "The Relation Between Cooking Conditions and Yield and Quality of Sulphite Wood Pulp," in which the effects of the conditions of the wood, composition of the acid, and method of steaming the digester were very ably and clearly explained.

Dr. Raymond F. Bacon, of New York, next spoke on "America's Sulphur Supply With Relation to the Requirements of the Pulp Industry," bringing out the rise of the United States sulphur industry in the last thirty years and showing its commanding position in the world markets. Dr. Bacon's remarks were supplemented by an interesting film illustrating the production of sulphur in Louisiana and Texas.

Soda Mill Operation at Tonawanda

William C. Munro, of the Tonawanda Paper Co., Tonawanda, N. Y., then spoke on "Modern Soda Mill Operation, as Exemplified in the Plant of the Tonawanda Paper Company, Inc.," giving a complete detailed description of the equipment and process used in this very modern plant which is the latest word in soda mill practice. This interesting contribution is published in full in another part of THE PAPER INDUSTRY, but it may be stated that the three outstanding features of the Tonawanda mill are: (1) The Mount continuous causticizing system, which has numerous advantages, including reduced floor area; closed system, eliminating practically all losses; cleanliness, and ease of, regulation and control; (2) the black ash is causticized directly without preliminary leaching and separation out of the carbon; (3) the Mount rotary washing drums, which are used instead of diffusers. Mr. Munro used a number of interesting slides to illustrate the various pieces of equipment and to bring out the compactness of the plant.

Underfeed Stoker Firing

The final paper of the afternoon was that of J. G. Worker, of the Affiliated Engineering Companies, Ltd., Montreal, on "Facts and Principles of Stoker and Powdered Coal Firing Which Have a Direct and Practical Bearing Upon the Selection of Equipment to Reduce Fuel Costs."

Mr. Worker made a very strong case for underfeed stoker firing, as compared with pulverized coal, and produced numerous figures and charts from large scale operations in support of his contentions.

Conclusions Challenged by Col. Savage

After the reading of the paper, Colonel Savage, of the Combustion Engineering Corporation, challenged a number of Mr. Worker's figures and charts on pulverized coal operation, and in turn produced figures and charts, which were also taken from operations in some of the largest United States Central power stations, to show that the overall efficiency of properly designed and operated pulverized coal plants was even better than that of similar underfeed stoker plants.

THURSDAY MORNING'S SITTING

The first paper presented at this sitting of the Technical Section was that of John T. Hoyt, of the United Filters Corporation, on "Elimination of White Water Waste with the American Continuous Filter," which appears elsewhere in this issue. Mr. Hoyt described the filter in detail and brought out its very striking advantages as a combined save-all and pulp washer.

Discussion of Acidity Effects in Coagulation

Martin L. Griffin drew attention to the colloidal aspect of the recovery of papermaking material from white water, more particularly in book mills where the back water from the machines contains considerable clay filler. The hydrogen ion concentration, or acidity, of the water was of very considerable importance, he said, and it has been found that a judicious increase in acidity increases the coagulation of the colloidal clay and results in easier and more efficient recovery of stock and filler.

Mr. Traquair Gives His Views

John Traquair thought that this statement of Mr. Griffin was perhaps a little broad and required some qualification; for optimum conditions varied according to stock and water and conditions. In Ohio, where the water had as much as 400 degrees of hardness, the cost of acidifying all the water used would be prohibitive, and it had been found that it is possible to make a good sheet even when the stock delivered on to the machine wire has an alkaline reaction. Operations under these conditions were more delicate and required more careful control than when working under acid conditions, but they were actually being carried out commercially in Chillicothe.

Good Field for Rotary Vacuum Filter

In the deinking of paper it was necessary to lower the surface tension by means of alkali in order to effect the removal of the ink and this generally resulted in a shrinkage of about 15 per cent in the material. With reference to vacuum filters, Mr. Traquair went on to say that the pressure of clay caused considerable trouble by clogging the filter, and this necessitated mixing the back water with a considerable proportion of fresh stock to get efficient filtration. This in turn required that the machine be watched closely; but he was at present working on a device for automatically regulating the fresh stock and white water feeds by means of which he hoped to overcome this troublesome feature. In conclusion, he stated that he considered that there was a very wide field of usefulness for the rotary vacuum filter in pulp and paper mills as combined pulp washer and save-all.

Efficiency of Machine as Stock Saver

In reply to questions by Geo. E. Bearce as to the efficiency of the machine as a stock saver, and by J. O. Mason as to the cost of the machine, Mr. Hoyt stated that much depended on the nature of the stock in the white water and on the general arrangement of the mill. In news mills, about 5 to 10 per cent by volume of the machine furnish, at a consistency of 3 per cent, would be added to the white water, and from 90 to 95 per cent of the fiber in the white water was recovered, over and above the whole of the fiber added in the form of fresh furnish. In mills making tissues, or other long-fibered chemical pulp paper, about 2 to 5 per cent of the furnish would be added to the white water, and the recovery would be about 95 to 98 per cent. On the whole, it had been found that the savings effected by the machine paid for the latter in one year or less.

Many Mills Do Not Know Extent of Losses

W. G. MacNaughton, secretary of T. A. P. P. I., considered that the main trouble with determining the saving effected by the American filter, or by any other type of save-all, was that the large majority of the mills did not know what their losses were, frequently lulling themselves with the idea that they were a good deal smaller than they actually were. An excellent example of this was to be found in a certain book paper mill where a thorough investigation of waste and application of the proper preventive means resulted in lowering the furnish from 127 per cent of the output down to 101.5 per cent, calculated on the bone-dry basis.

Exception by a Mill Manager

R. A. McInnis, manager of the Abitibi Power & Paper Company, took exception to Mr. MacNaughton's sweeping statement that most of the mills did not know what their losses were, for the newsprint mills, on the whole, had a pretty accurate knowledge of their wastes. But mere knowledge of the extent and cause of the waste is not sufficient to enable it to be eliminated; means must be at hand to recover the material economically and if the cost of recovery is greater than the value of the recovered material the best thing to do was to leave the recovery system strictly alone. It was with a view to devising a truly practical and economical machine that the Abitibi mill had approached the United Filters Corporation, and their joint effort had resulted in the pulp type of American filter.

Operation of an Air Preheater

C. A. Jacobsson in his paper on "Operation of the Ljungstrom Air Preheater" described this interesting piece of apparatus and gave examples of typical installations which have been in successful operation for the past few years. Carefully carried out tests, with and without the preheater, showed that the latter raised the boiler efficiency by about 10 per cent and effected savings in fuel of up to 20 per cent. Its advantages are shown by the fact that 300 of them are in use at present, about 100 of them being in the United States and Canada.

Possible Difficulties with a Preheater

Replying to a question by Dr. J. S. Bates, the speaker stated that with coals having a low-fusing ash the increase in furnace temperature obtained with the preheater might cause trouble owing to the clinkering; but this might be obviated by increasing the air to lower the temperature. It is true that this in turn would cause greater stack loss, but in view of the fact that 70 per cent of this is recovered in the preheater there would still be a considerable improvement over operation without the preheater. The size of the preheater, of course, would probably have to be increased to take care of the greater volume of gases.

Corrosion tests carried out under average conditions had shown that the average life of the heat exchanger plates would probably be about ten years, but would be shorter with high sulphur content and low temperature. The actual heat transferring efficiency, however, is unaffected by the corrosion, because heating surface is not reduced thereby.

The heating plates must be cleaned periodically, this being effected by means of a steam nozzle incorporated in the machine. The frequency can vary from about once every eight hours to once every twenty-four hours, depending on local conditions. The necessity for cleaning is indicated by means of two draft gauges at the fresh air inlet and outlet, respectively. The normal difference between the two should be about half an inch of water; when it rose to five-eighths of an inch, the surfaces should be cleaned.

Limitation of "Professional Chemists"

The committee appointed the previous day to investigate the possible effects on the testing staffs in the mills of the Chemists' bill at present before the Quebec Legislature reported that H. J. Roast had been interviewed, and that the definition of "Professional Chemist" had been modified in such a way as to specifically exclude "mere skilled artisans or workmen who in the course of their duties employ the art of chemistry in certain of its branches." This, it was considered, would cover the case of such men as sulphite cooks, acid plant foremen, and laboratory assistants running routine tests.

Election of Officers

Before adjourning for lunch the following officers were elected: Chairman, Prof. H. O. Keay, Laurentide Company; vice-chairman, A. P. Costigane, secretary and engineer of the Ontario Pulp and Paper Makers' Safety Association; Councillors, C. Nelson Gain, Canadian Vegetable Parchment Company; H. J. Buncke, Abitibi Power and Paper Company, and S. Wang, Canadian International Paper Company, Hawkesbury, Ont.

Prof. Hibbert Is Guest of Honor at Luncheon

Prof. Harold Hibbert, who has been appointed to the chair of Industrial and Cellulose Chemistry founded recently at McGill University, was the guest of honor at the luncheon given under the joint auspices of the Research, Technical and Woodlands Sections. In his address he dealt with what scientific research has to offer to the pulp and paper industry in Canada and what results can be expected from the co-operation of the government, the industry and the university who

have definitely come together on this matter. Scientific research, technical research, and mill control are all three needed if the industry is going to make the headway that it should. Under the new scheme efforts along these three lines will be co-ordinated for the greatest benefit of all.

Rule of Thumb vs. Science

At the outset, Prof. Hibbert referred to the fact that the pulp and paper industry had been built up on the principle of development by trial and error, a process of elimination, rather than a knowledge of the fundamental properties and constitution of the raw materials. He then gave an outline of the various lines of projected scientific research to be carried out at McGill University which were likely to be of considerable value in the development and utilization of Canada's forest resources.

The Trinity of Research

Praise was accorded the joint scheme of government, industry and university in such research. It gave Canada the lead in this respect, said Prof. Hibbert, who proceeded to quote from the pamphlet, "What Price Progress?" by Hugh Farrell, financial editor, *New York Commercial*, in support of the statement that it is only quite recently that America has come to realize the necessity of and the valuable results to be obtained from fundamental and scientific research.

In conclusion, the value of a well-organized program of research, looking to the replenishment of Canada's forest resources, was emphasized, with the suggestion that both Canadian and American interests should work together so that the life blood of the industry might remain assured.

Dr. R. F. Ruttan, director of chemistry at McGill University, predicted valuable results as a result of the present plans.

C. Nelson Gain, chairman of the technical section, presided, others at the head table being: Col. C. H. L. Jones, H. G. Schanche, Prof. H. O. Keay, R. W. Hovey, Frank W. Clarke, W. McE. Bowden, Dr. J. S. Bates, O. F. Bryant, R. A. McInnis and F. A. Sabbaton.

Would Make Montreal Cellulose Center of the World

The afternoon was devoted to a joint session of the Research, Technical and Woodlands Sections. Col. C. H. L. Jones outlined the work carried out by the Research Section, showing how they had succeeded in inducing the Canadian Pulp and Paper Association to contribute to McGill University to supplement the Eddy bequest, which enabled the University to secure Prof. Hibbert for the chair of Industrial and Cellulose Chemistry. The matter had been presented to the association as a strictly business proposition which would ultimately bring results in increased dividends; the association had been convinced and was putting up the money asked. The Research Section, said Col. Jones, was ambitious, and they aspired to make Montreal the cellulose center of the world, a Mecca to which cellulose scientists from all over the world would come to make pilgrimages.

On "Avenues That Lead to Nowhere"

Prof. H. O. Keay considered that the co-operation of the government, the university and the industry should give the best guarantee of stability and results, but uttered a word of caution. "We must not be impatient," he said. "You know the disappointments of the avenues that lead to nowhere. The end is glorious and we must be patient for results. We have every reason to expect that they are going to be well worth while."

Ben Avery, speaking on behalf of the Woodlands Section, stated that they also intended erecting a monument which would long outlive all those present, one which was equally vital to the industry and without which the results of the research might go for naught, a permanent forest which would assure a constant supply of material to apply successfully.

Tree Planting as an Installment

Referring to the selected cutting methods in use in several European countries, C. B. Thorne, of the Canadian International Paper Company, stated that silviculture might be considered as an investment which would bear interest in twenty to thirty years from now. Bankers were not wont to invest money and let it lie dormant for such a period of time; but the technical men and the woodlands men should endeavor to educate their executives to this idea, as otherwise both capital and interest might be wiped out in a relatively short time owing to lack of raw material.

The organization of the work to be carried out under the joint auspices of the Dominion Government, McGill University and the Canadian Pulp and Paper Association was described in detail by E. P. Cameron. The subject is fully covered by the report of the Research Section to the parent association, which is abstracted on another page in this issue of THE PAPER INDUSTRY.

Cabaret Dinner a Success

The usual smoker, an event which was always looked forward to with certainty of a very enjoyable time, was this year replaced by a cabaret dinner, which proved as successful as the smoker has been in the past. Mr. Cadman, who was in charge of the arrangements, accomplished marvels in accommodating the unexpectedly large number of guests, and to him goes the lion's share of the credit for the success of the evening.

Annual Meeting of the General Association

Friday, January 29

THE annual meeting of the Canadian Pulp and Paper Association was opened by Pres. Frank W. Clarke in the Vice-Regal Suite of the Ritz-Carleton Hotel on Friday morning, January 29, at 10 o'clock. In his annual address, Mr. Clarke reviewed the outstanding features of the year just ended. Referring to the sustained phenomenal expansion in the newsprint production of Canada, he noted with pleasure that the alarmist views which had been held in certain quarters regarding over-expansion had not materialized, as production in countries other than Canada had not kept pace with the ever-increasing demand for newsprint. Other branches of the industry, however, were not in such a favorable position, and importations of grades other than newsprint were valued at about $10,000,000 a year. A large proportion of these imports were of grades and qualities which could very easily have been supplied by domestic production, and every effort should be made to educate the consumers to buy "Made-in-Canada" paper whenever possible.

A feeling tribute was paid to the memory of the late John R. Booth, and a resolution of condolence was adopted, to be transmitted to his family and his business associates. A resolution was also adopted expressing appreciation to the executors of the estate of the late Mrs. E. B. Eddy and to the E. B. Eddy Company, of Hull, Que., in connection with the bequest of $200,000 to McGill for the establishment of a chair of Cellulose and Industrial Chemistry.

L. R. Wilson, vice-president and general manager of the Abitibi Power & Paper Company, was elected president of the association for the year 1926.

President's Luncheon

Col. R. R. McCormick Is Entertaining.—At the president's luncheon, Col. R. R. McCormick, president of the Ontario Paper Company, and president of the Chicago Tribune Publishing Company, treated of a serious subject in a somewhat light and happy vein which delighted those present. Talking of the future of the industry, and more particularly of the newsprint industry, Col. McCormick looked to the future with confidence. An analysis of present and probable future conditions showed that the newspapers were increasing both in circulation and in size of their issues; there is no reason to believe that this state of affairs is about to end, but on the contrary signs point to their becoming intensified. The real problem, therefore, is not one of restricting production, but of taking suitable means to insure an adequate and permanent supply of raw materials to meet the ever-increasing demand.

Mr. McCormick's address touched on many subjects, but began and ended with humorous references to prohibition. He observed that Quebec had a surplus of the essentials of life and spoke of a growing market for certain new electric ice boxes, saying that he had been told by those who indulge in the practice that the same result can be obtained from an

ice box which previously was taken from a tea kettle. He described the efforts of some concerns in Chicago to produce synthetic paper, gave an outline of the genealogy of the McCormick family, spoke of the big new Tribune tower just erected in Chicago, and referred to his interests in Canada, which, he said, from experience would give him a fight for some time to come.

All Past Presidents in Attendance

Frank W. Clarke, president of the association, acted as toastmaster and seated with him at the head table in addition to Col. R. R. McCormick were a number of past presidents of the association, in fact the list was intact, every past president from 1913 to 1924 being present. They were Carl Riordon, I. H. Weldon, J. H. A. Acer, C. Howard Smith, F. J. Campbell, J. A. Bothwell, George Chahoon, Jr., Percy B. Wilson, George M. McKee, H. F. E. Kent, and George Carruthers. Albert Halstead, U. S. consul general at Montreal, and R. S. Kellogg, secretary, Newsprint Service Bureau, New York, were also present.

Annual Dinner of the Association

The annual dinner of the general association was not held this year. In its place a small dinner was given in the Ball Room by President Clarke, to which invitations were restricted. There were perhaps 150 in attendance, who met the president at a reception in the Blue Room, immediately preceding the dinner, which was served at half past 7 o'clock on Friday evening.

Premier Taschereau Asks Free Entry of Paper

When the coffee was reached, President Clarke, who acted as toastmaster, introduced Hon. L. A. Taschereau, prime minister of the Province of Quebec, who discussed present conditions in the Quebec pulp and paper industry and suggested the measures which should be taken to conserve the industry, which he believed was very close to overproduction and he intimated that new firms should not be encouraged too much, while established firms which have aided in the building up of the province should be protected to the fullest extent. Touching on the much talked-of embargo or export tax on pulpwood cut from freehold lands, the premier stated that if Americans object to an embargo on pulpwood from private lands, the way to prevent such an embargo was to give free entry to all paper entering the United States from Canada. "Our American friends, perhaps, do not know what retaliation means, but we know something about it. If Americans object to an embargo on the wood from private lands, the way to prevent such an embargo is to give free entry to all paper entering the United States from Canada."

Power Developments in Quebec

Prime Minister Taschereau gave a most interesting and instructive account of power developments in Quebec. In the Province were to be found, he said, great waterpowers and great electrical energy. He spoke of the remarkable development now taking place in the Lake St. John and the Saguenay districts. [At Arvida, a new development of the Canadian Aluminum Company, there will eventually be the largest aluminum plant in the world.] One larger even than the Ford plant at Detroit, the premier had been told.

Returning to the topic of the pulp industry, Prime Minister Taschereau said that some of the pulp and paper mills in the Province were working "eight days a week." He declared that the government intended to see that the Sunday observance laws were observed in the pulp and paper mills, in the interests of both the workers and the operators. Finally, he stated that he had still another "unpleasant dish" to serve. The government wished to promote education, both university and primary. They would be called upon shortly, very shortly, he said, to do a little in this respect. The government believed that the immense natural resources of the Province should be called upon to help the cause of education; but he assured the gathering that the burden to be imposed upon them would be a light one.

Prime Minister Taschereau was followed by Dr. R. J. Manion, member of parliament for Fort William. He was introduced by Hughes Jones, who sketched his professional, soldierly, and parliamentary career.

Dr. Manion spoke in lighter vein and touched on the development of a greater entente cordiale between the French Canadians and the English speaking Canadians, saying that a better feeling now existed between the two races. Although he had lived all his life in Ontario, he knew the French Canadians very well, for he had married one.

Normal W. Wilson, president of the American Paper and Pulp Association, was called upon to speak and he replied in a few well chosen words, making a remarkably good impression by his tactful reception of Premier Taschereau's patriotic speech. Colonel R. R. McCormick and George Carruthers also spoke.

SECTION REPORTS

Position of Pulpwood Embargo

An erroneous report gained currency after the meeting that the association had reaffirmed the action taken by the association at last year's meeting calling upon the government to impose an export duty upon a graduated basis, increasing annually, on all logs and pulpwood exported from Canada. The facts are that a resolution introduced by the Committee on Resolutions asking the association to declare its approval of legislation making it compulsory to manufacture in Canada all wood cut off federal and provincial lands, which was moved for adoption by one of the members, was withdrawn after a long and warm debate, and no further action was taken. This, it will be seen, leaves a nice parliamentary situation which may be interpreted differently by different persons, but it appears at least to leave matters as they were before.

Report of the Research Section

The annual report of the Research Section, Col. C. H. L. Jones, chairman, was most comprehensive in character. The Research Section is the outgrowth of a Committee on Industrial Research, which at last year's meeting made definite recommendations based on preliminary work in co-operation with the Federal Government for the joint operation by the government and the Canadian Pulp & Paper Association of the pulp and paper section of the Forest Products Laboratories of Canada. This report was approved by the association, which at the same time elevated the status of the committee to that of a section within the association. At a meeting of the newly established Research Section, attended by D. R. Cameron, associate director of forestry, details of the co-operative scheme were discussed and settled. A joint administrative committee was appointed, Rex W. Hovey, Abitibi Power & Paper Company, being named chairman, and Dr. J. S. Bates and O. F. Bryant as representatives of the industry, W. G. Kaynoch, superintendent of the Forest Products Laboratories, being the representative of the government. By an Order-in-Council, the government on March 12, 1925, accepted the agreement. The Research Section met on April 1, 1925, to ratify the agreement and put it into operation. Since that time, a chair of industrial and cellulose chemistry had been established at McGill University through the generous bequest of the late Mrs. E. B. Eddy, and the appointment of Dr. Harold Hibbert to this chair assured the prosecution of the proposed researches. The Canadian Pulp & Paper Association aids in the maintenance of the new chair of industrial and cellulose chemistry by an annual grant of $7,500. As Doctor Hibbert has since been appointed a member of the Joint Administrative Committee for the Division of Pulp and Paper, there are now represented on the committee the three most important groups interested in research —the University, the Government and the Industry.

Colonel Jones went into considerable detail regarding the organization of the committee and its tripartite responsibilities. The director of the pulp and paper division, E. Parke Cameron, is responsible to the joint administrative committee, contact being obtained through a system of reports and meetings.

The attitude of the government was referred to in terms of appreciation, and the courtesy and co-operation of the City Service Commission in filling vacancies in the division were particularly mentioned. Two assistant chemists and one laboratory assistant were appointed. The position of technical assistant was filled by the appointment of W. Boyd Campbell, a man of technical training and considerable experience in the

industry. Two positions remain to be filled, those of research specialist and experimental specialist.

A considerable sum has been expended by the government in the construction of a constant humidity room for paper testing. The amount was stated as $7,000. The Research Section added temperature control to the installation at a cost of $1,900, besides additional apparatus which it had been found difficult to procure through government channels; such equipment bought by the Research Section is to remain association property.

A most ambitious program of investigational work has been mapped out, and some real accomplishments are already credited to the division, as for instance the design and construction of a standard freeness testing apparatus for groundwood pulps; critical analyses of cellulose tests and their application, these being referred to as steps in the direction of developing better methods of measurement for raw materials, processes and products.

The industry is kept informed of the work of the division, letter sheets of standard size, printed on both sides and punched for three-ring binding, so that the sheets may be placed in personal file or kept together in booklet form. Three issues of this publication appeared.

Meeting of Woodlands Section

Canada's Forest Wealth Is Dwindling

THE Woodlands Section under the chairmanship of Herman Schanche also held some very important meetings on Wednesday.

The morning session was devoted to a symposium on "The Present Status of Canada's Pulpwood Resources and the Progress of Silviculture in the Dominion," which was led by Roland D. Craig, of the Forest Service of the Department of the Interior, Ottawa, which was participated in by G. C. Piche, chief of the Forest Service of the Province of Quebec, E. J. Zavitz, provincial forester of the Province of Ontario, and L. S. Webb, provincial forester of the Province of New Brunswick.

Canada's Disgrace

The discussion brought out the alarming fact that only 27 percent of Canada's original forest wealth is left, 13 percent having been cut for use and 60 percent destroyed by fire, wind and disease, and that the forest capital had become depleted beyond the limit of safety. Forest fire losses in Canada were stated to be a disgrace to the citizens of the Dominion. The situation calls for the taking of immediate steps with a view of rehabilitating the forest capital, and for progressive reforestation to maintain and increase the present supply. It is of particular importance to the pulp and paper industry, as the huge capital invested in the business is dependent on a sufficient and stable supply of raw material.

Systematic Reforestation

Mr. Craig went exhaustively into the subject of silviculture, and spoke of the efforts being made by many companies to cultivate forests in a systematic and scientific way. There lay the path to be followed, he said, to provide the required raw materials, for Canada has the land and the facilities to take proper steps to guard against depletion.

Section to be Reorganized

At the afternoon session the reorganization of the section was considered. The report of the special committee appointed to consider suggestions for the reorganization was discussed. The members considered that the section had reached a stage in its existence where reorganization was imperative to enable the section to play successfully the very important part which logically falls to its lot in improving forestry and silvicultural practice. The reorganization along the lines proposed was duly approved, and a grant of $6,000 was asked of the parent association to enable the work proposed for the ensuing year to be successfully carried out.

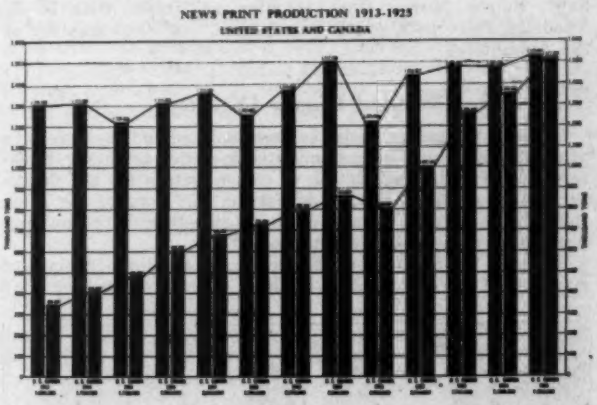
Mr. T. A. Weldon, treasurer and Mr. C. F. Buss, superintendent of the Provincial Paper Mills Limited, Thorold, Ontario, have gone with their wives on a visit to California.

News Print Service Bureau Meets

Now a Truly Continental Association with Admission of Mexico to Membership

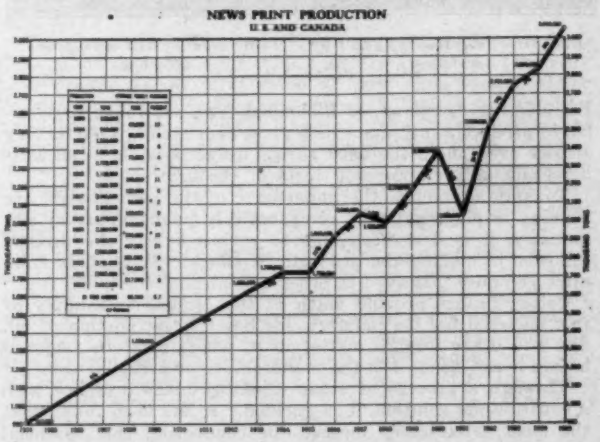
IN ADDITION to meetings of the Technical Section and the Woodlands Section, the Newsprint Service Bureau held a meeting on Friday afternoon at which Secretary R. S. Kellogg made his annual report. This covered production in the United States and Canada and gave figures as well for Newfoundland and Mexico.

It developed that during 1925 the United States produced 1,530,000 tons of newsprint paper and Canada 1,522,000 tons. North America's entire output was 3,162,000 tons, or 9 per



cent more than in 1924. Newfoundland produced 97,000 tons, and Mexico 13,000 tons. North America's consumption was equivalent to 98 per cent of the production.

The interesting fact was brought out that the percentage of increase in production was greater in Canada than in the



United States in 1925. The United States output was 3 per cent more than in 1924; Canada made 12 per cent more than in 1924.

Mr. Kellogg said there had been no change in Mexican newsprint production for several years, but that an increase of 52 per cent over 1924 in Newfoundland was the beginning of an enlarged production in that colony which will be still more marked in 1926.

Newsprint consumption in the United States in 1925 amounted to nearly 3,000,000 tons. Of this amount United States users took all but 23,000 tons of the American production, 85 per cent of the Canadian output, 130,000 tons from overseas and 20,000 tons from Newfoundland.

The Newsprint Service Bureau is now a truly continental institution, for at this meeting the only newsprint mill in Mexico, San Rafael, was elected to membership.

The accompanying interesting and informing graphic charts

of newsprint production in the United States and Canada were handed around at the meeting.

New Officers

The election for officers of the bureau to serve during 1926 resulted as follows: President, Louis Bloch, president of the Crown Willamette Paper Company, San Francisco, Calif.; vice-president, Louis Armstrong, treasurer of the Laurentide Company, Grand Mère, Quebec; secretary-treasurer, R. S. Kellogg, New York.

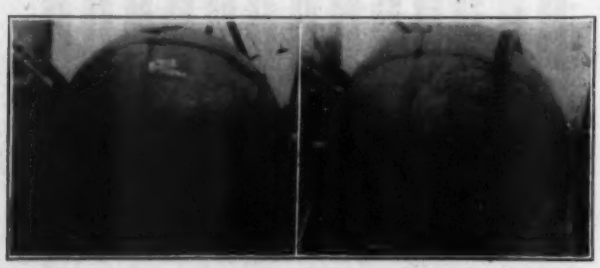
Mr. Graustein on Executive Committee

A. R. Graustein, president of the International Paper Company, was elected a member of the executive committee, of which Percy B. Wilson, Spanish River Pulp and Paper Mills, Sault Sainte Marie, Ont., remains chairman, with J. L. Apedaile, Price Brothers & Co., Quebec, the other member of the committee.

Welded Rotary Digesters

Constant danger of entire failure, leakage and the necessity of calking have now been eliminated in so far as rotary digesters, used for the purification of cotton linters for the manufacture of artificial silk, is concerned. Of course, the same thing holds true of the use of these digesters in the pulping process of paper manufacture.

Through the application of electric arc welding, in place of riveting, in the construction of these digesters, the Richmond



Ball prior to installing gears by welding *Side view of ball with gear attached*

Engineering Company, of Richmond, Va., has found it possible to produce a machine which gives consistently satisfactory service even under the most severe usage possible in an artificial silk mill, engineering tests of the firm show.

To fully appreciate the importance of the part electric arc welding is playing in the comparatively young artificial silk industry, it is first necessary to review briefly the process followed in making the product. Artificial silk is made from nitro cellulose dissolved in ether and alcohol.

Cotton linters provide much of the commercial supply of raw material for the industry. It has a great portion of oil, dirt and other foreign matter in it, which must be removed before it can be used in the manufacture of artificial silk.

Through a process of steam cooking under pressure with a caustic soda solution, it is purified. It has been found that the most satisfactory method for conducting this essential operation is provided through the use of a large steel pressure vessel, built to withstand high internal pressure, and adequate to handle an enormous unit charge of solution and cotton.

The vessels or rotary digesters manufactured by the Richmond Engineering Company for this purpose are made of pressed steel plates ¾ inch in thickness, spherical in shape and 14 feet in diameter. These great balls revolve on massive steel trunnions, the centers of which are hollow. Through fixed pipes, which enter the balls on the axis through the hollow trunnions, steam for cooking is admitted.

Because artificial silk producers and manufacturers of digesters had found that rivets could not satisfactorily stand up under the severe use called for in these great vessels, extensive studies were made by the Richmond Engineering Company to determine upon a joining process which would give one hundred per cent satisfaction. It was found that electric arc welding, the "Stable Arc" method of the Lincoln Electric Company of Cleveland, provided the solution.

Through the use of Lincoln "Stable Arc" welders, the Richmond Engineering Company has been enabled to do a welding job which is constantly good, and which has eliminated all complaints of digesters leaking, the firm's engineers state. Since the adoption of the "Stable Arc" process, there has never been a failure of the digesters, nor is there any possibility of there being in the future, for each one of the balls is tested by a water pressure of 120 pounds per square inch before it leaves the Richmond plant.

The builders of the digester now use Lincoln welders to weld the shell of the digester to the lugs which are bolted to the cast iron segment gear and the balls. Under this process no machine work is necessary in the manufacturing and installation of the big gear for the digester.

Through this type of construction vital portions of the machine become one integral unit, the welding serving to join the different parts with a strength equal to that of any of the steel members.

Officials of the Lincoln Electric Company state that this is but one of a wide range of new uses to which the "Stable Arc" welding process is being put, because of the ability of a welded joint to stand up under the most severe conditions and where riveted connections have repeatedly failed.

A Turbine That Paid for Itself

A turbine generator of the extraction type is used by the Northern Paper Mills, Green Bay, Wis., for generating some electricity needed in the plant and also for furnishing low pressure, extracted steam for process work and heating. This equipment, installed three years ago, is a General Electric 2,000 kw., 3,600 r. p. m. machine, the generator being rated 2,500 kv-a., 480 volts, 60 cycles, 3-phase at .80 power factor.

When the turbine is operating straight condensing the cost per kilowatt-hour is $0.0077 and, when 7,500 pounds of steam per hour are being extracted the cost is $0.0062. The total saving per year over the old method, based on a recent analysis made at the Northern Paper Mills, is approximately $40,000. Over a possible installation of a straight condensing type turbine to carry the electrical load handled by the present unit and the use of live steam for heating and bleaching, $11,467 is saved annually.

Based on this it is estimated the turbine installation has saved the Northern Paper Mills over the current price of purchased power better than $100,000 since installation and the total saving due directly to the installation of the generating equipment has exceeded the original cost of the installation, including all foundations, buildings, piping, equipment and the changing of approximately 250 motors from 25 cycles to 60 cycles at the time of the installation of the power unit.

New Motion Picture Film

The A. M. Byers Company has brought out a new four-reel film, a Pathe production entitled, "The Little Red Ball." It embodies a diagrammatic as well as a scenic presentation of the manufacture of wrought iron pipe from ore to finished product. Especially interesting are the parts showing the hand puddling of genuine wrought iron, including diagrammatic views of the interior of a puddling furnace, the drawing of the "little red ball," squeezing, rolling of muck bar, cutting, piling, reheating, and rolling, which are characteristic of wrought iron processes. The methods of forming and welding flat strips of "skelp" into pipe are especially well explained by animated drawings.

Free showings of this film may be secured by communicating with the A. M. Byers Company, Pittsburgh, Pa.

No Connection With Shartle Bros. Machine Co.

The Shartle Machine Company of Columbus having gone into the hands of a receiver has been the cause of some confusion among the paper trade.

We wish to correct the impression in some minds that there is any connection between the Shartle Brothers Machine Company and this receivership. While the names are similar yet there is no family connection nor business relation between the two companies in any respect.

Elimination of White Water Waste with the American Continuous Filter*

By JOHN T. HOYT
United Filters Corporation

UNTIL comparatively recent years, the loss of large quantities of fiber in mill effluent or white water was regarded as a sort of necessary evil by a very large number, if not the majority, of paper manufacturers. This was particularly true of the paper machine operators, who considered it essential to the making of a good sheet that a certain portion of the extremely short fiber and wood flour should be discarded along with the white water. An additional reason, or at least excuse, for this practice, was, of course, to avoid the accumulation or building up of slimes in the mill system.

However, as a natural result of the impending scarcity and increasing cost of raw materials, together with the sharp rise in manufacturing costs that occurred during the war, the attention of paper mill executives and operators was inevitably and forcibly drawn to the enormous waste that this condition actually represents.

A full realization of just what these losses amount to in dollars per year was largely made possible by the careful investigation of the technical and research departments, which are today an essential part of the organization of most of the leading and more progressive paper companies.

A great deal of credit is also due the Technical Section of the Canadian Pulp and Paper Association, as well as the "Committee on Waste" of the corresponding American Association, for the information they have collected on this important subject, and particularly for the widespread and active interest which their findings have helped arouse.

At the meeting of the American association, which was held in Detroit, Michigan, during the fall of 1922, a subcommittee was appointed to make a detailed study of waste in mill effluents. With a view to making a fairly comprehensive survey of total losses from this source, the subcommittee prepared a standard questionnaire which included the following essential points:

(1) Kind and quantity of paper produced; (2) amount of white water sent to sewer; (3) number and type of save-alls used, if any; (4) pounds fiber lost per day.

These apparently simple questions were widely distributed among American mills, and the returns were so interesting and significant that we take the liberty of quoting the following introductory remarks from the subcommittee's first report:

"Approximately 400 questionnaires were sent to a great many mills, to which 64 replies were received. With a very few exceptions, however, the information obtained in these questionnaires was very inadequate, and little tangible data can be obtained from them. The only definite piece of information brought out, and that very forcibly, was that most paper mills are in a happy state of ignorance as to the amount of fiber or other losses throughout their mill effluents."

While this report reflects a condition which was probably more or less general at that time, in American mills at least, there is much evidence pointing to the fact that there has since occurred a decided change in attitude on this subject. A considerable number of mills have accurately determined the nature, source, and size of their losses and many of them are now taking effective steps to abolish this unnecessary waste. Much of the work appears to have been modelled after the excellent systems of sampling and technical control in use by certain of the leading Canadian newsprint mills.

An Estimate on Losses

In order to get a rough idea of the present total loss in dollars, Mr. Hovey (Abitibi Power & Paper Co.) has prepared an estimate based on the Canadian production figures for 1924. Using the best data available, he has conservatively estimated the percentage losses on each grade of paper and pulp, and has evaluated the resulting totals at prices that represent only a very nominal value for the stock lost.

	Production Tons	% Waste	Waste Tons	Value Ton	Waste Dollars
Newsprint	1,353,000	.5%	67,650	$20	$1,353,000
Book & Writing	70,000	4%	2,800	20	84,000
Wrapping	90,000	3%	2,700	20	54,000
Boards	135,000	5%	6,750	15	101,250
Mechanical Pulp	265,000	4%	10,600	10	106,000
Sulphite Pulp	360,000	2%	7,000	30	216,000
Sulphate Pulp	128,000	2%	2,560	20	51,200
	2,401,000		100,260		$1,965,450

The groundwood, sulphite, and sulphate pulp production figures are exclusive of the pulp used in making the quantities of paper indicated. Since a good many paper mills purchase or use lapped pulp, on which a white water loss has already occurred that is not reflected in the foregoing estimate, it would appear that the calculated losses are well on the conservative side.

Applying the same method of estimating to the American production for 1923, gives a very much higher loss than for Canada. This is chiefly due to the larger proportion of book, writing, and other papers, containing largely chemical pulp, which are produced in the States.

ESTIMATED WASTE IN MILL EFFLUENTS —UNITED STATES

1923

	Production Tons	% Waste	Waste Tons	Value Ton	Waste Dollars
Newsprint, 1924	1,470,581	5%	73,500	$20	$1,470,000
Book & Writing	1,598,431	4%	63,900	30	1,917,000
Wrapping	1,026,979	3%	30,800	20	616,000
Boards	792,832	5%	39,700	15	595,500
Mechanical Pulp	1,580,553	4%	63,200	10	632,000
Sulphite Pulp	1,448,787	2%	29,000	30	870,000
Sulphate Pulp	243,681	2%	4,860	20	97,200
Soda Pulp	445,162	2%	8,900	20	178,000
	8,607,006		313,860		$6,375,700

While the combined losses for Canada and the United States as above calculated amount to $8,341,150, it seems probable that if the true figures for all mills were available, the total might easily reach ten million dollars per year, and possibly a great deal more.

The foregoing estimates are in no way intended as authentic statistics on this subject, but merely as an effort roughly to approximate the total value of fiber being lost to sewer in white water. From the somewhat limited information available on this subject, however, it appears reasonably certain these estimates do not exaggerate present conditions, and that the reverse is more apt to be the case, particularly if we include the large quantity of clay filler, sizing, color, etc., that are also wasted in the effluents from many mills.

In order fully to appreciate the comparative value of the waste elimination methods to be later described, let us first consider very briefly the methods and types of equipment which have heretofore been in general use for the recovery of stock from white water. The principal ones may be broadly grouped into three general classifications:

Rotating Screen Save-alls;
Inclined Screens;
Sedimentation.

Rotating Screen Save-Alls

Rotating screen save-alls are usually operated at speeds of seven to ten revolutions per minute, and the water is caused to flow through the covering wire, either by a very low hydraulic head or by a slight vacuum maintained within the drum. In certain types, a combination of both is employed.

The thin sheet or layer of pulp deposited on the surface of the drum is removed every revolution, thus exposing the bare wire seven to ten times a minute.

Under these conditions the Fourdrinier wire functions primarily as a sieve or screen, at least during a considerable part of each revolution, and until a pulp film of appreciable thickness has been formed. This being the case, it is apparent, as well as a matter of experience, that the amount of fiber recovered is very largely determined by the mesh or size of openings in the wire employed.

For various practical reasons, it is seldom customary to

*Read at the Annual Meeting of the Technical Section of the Canadian Pulp & Paper Association, Montreal, Jan. 27-29, 1926.

use anything finer than 60 to 90 mesh wire, and even the latter will permit a considerable percentage of the fiber to pass through it along with the white water. Also, in the case of open ended drums equipped with deckle straps or collars, an additional amount of stock also invariably escapes around the ends of the drum into the effluent.

On account of these features, which are inherent in the revolving screen type of save-alls, it leaves a very great deal to be desired from the standpoint of recovery efficiency. Because of differences in individual design and operating results, as well as widely varying conditions in different mills, it is difficult to give specific recovery figures that are not apt to be contradictory to the experience of certain mills. While the plants in which we have so far collected data on this subject represent a comparatively small portion of the total

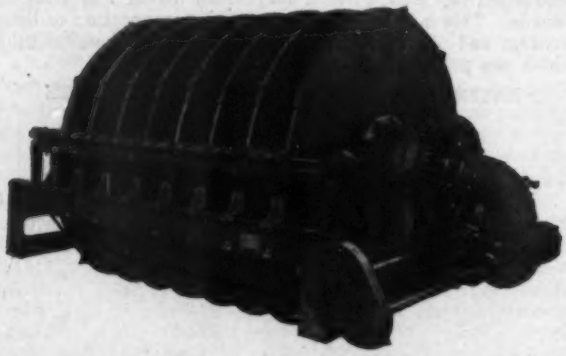


Fig. 1—9 ft. diameter—8 disc American Continuous Filter (Paper Pulp Type—800 square ft. Area)

number using save-alls, we believe the results are sufficiently typical to warrant their being mentioned.

An analysis of the figures kindly furnished us by a number of representative mills indicates that under the best conditions, a revolving screen save-all may recover from 65 to 75 per cent of the fiber in white water, but that, in most cases, their efficiency is much lower, sometimes down to 30 per cent or even less. Somewhere around 50 per cent would probably be a fair average.

Inclined Screen Save-All

The recovery efficiency of an inclined screen is still lower; and except when handling white water containing sulphite or other long chemical fiber, the percentage retained on the wire in many instances scarcely warrants its use at all. It is not unusual for 75 per cent to 85 per cent to the total solids in groundwood white water to be lost through an inclined screen; and even when used on long fiber effluent, the recovery seldom exceeds 40 per cent.

Nearly all of the preceding remarks concerning revolving screen save-alls apply equally well to deckers or cylinder moulds ordinarily employed for thickening stock. On account of the much higher density of the feed, the percentage of total stock retained on the decker drum is naturally greater than in the case of a save-all handling white water; but the effluent generally has a high consistency. For example, the effluent from an ordinary groundwood decker receiving thin stock at 0.4 per cent to 0.5 per cent density, generally averages around 6 lb. fiber per 1,000 gal. This means that for every 100 bone-dry tons of stock delivered to the deckers, from 12 to 15 tons pass directly into the white water system, and a considerable portion of this is usually lost. While the effluent from a sulphite decker handling stock at from 0.2 per cent to 0.3 per cent density has a much lower consistency, it ordinarily ranges from ¾ to 1 lb. per 1,000 gal. This is equivalent to a loss of from 3 to 5 tons into the white water system for every 100 tons thickened.

The deckering or thickering operation as now generally practiced, represent one of the largest if not the single largest, source of white water produced in the average paper mill. It is apparent that if a perfectly clean separation of pulp can be made at this point, and practically clear water discharged instead of the usual white water, that it would represent a long step toward reducing and simplifying the entire problem of waste from this source. As we will explain in more detail later, this is now being actually accomplished.

Having briefly outlined the heavy penalty imposed on the pulp and paper industry through waste in mill effluent, and the comparative inadequacy of revolving drum and inclined screen save-alls toward overcoming it, we are now ready to take up the real subject of this paper—Elimination of White Water Waste with the American Continuous Filter.

Experiment with Continuous Filter

Several years ago the management of the Abitibi Power & Paper Company, Ltd., became impressed with the idea that the deckering or thickening of stock, as well as recovery of fiber from white water, were both essentially filtration problems that could best be handled by equipment designed for this specific purpose. Following a preliminary joint investigation by their research department and engineers of the United Filters Corporation, a small size American continuous filter was installed in their Iroquois Falls mill, and a rather elaborate series of tests was begun to determine its efficiency as a groundwood decker.

Although in very general use by the metallurgical, chemical, food products, and many other industries, this was the first time that the American, or any other continuous vacuum filter (so far as we are aware), had ever been used for this particular purpose. Quite naturally, certain unforeseen difficulties and problems had to be met and overcome. Also, a number of important modifications in design proved necessary properly to adapt the filter to this new and unusual service. After these preliminaries were satisfactorily straightened out, however, the filter was kept in more or less continuous operation over a period of six months or so and the results proved most gratifying.

The white water from their ordinary groundwood deckers usually carries around 6.7 lb. fiber per 1,000 gal., and at times even more. The corresponding effluent from the American filter when operating at maximum speed and capacity, was found to average 1.25 lbs. per 1,000 gal. (0.015 per cent) or only a small fraction of the quantity carried in decker white water. By reducing filter speed and capacity somewhat, it proved possible to discharge effluent carrying as low as 0.8 lb. per 1,000 gal.

Moreover, a careful examination of the two effluents revealed the interesting fact that the decker white water included a considerable percentage of the long and most valuable fiber, whereas that from the filter carried practically nothing but wood flour and slime, with a very few extremely short fibers. In view of the nature and extremely small quantity of the latter, it was apparent that in commercial operation, the effluent from a filter could, if desired, be sent direct to sewer without any loss of stock worth mentioning, and at the same time, render unnecessary the use of save-alls. In short, the functions of both a decker and save-all would be combined in a single machine.

As a result of this experimental work, arrangements were later made by the Abitibi Power and Paper Company for the installation of a full sized filter, to serve both as a decker and save-all in their groundwood decker room. At this point, we will endeavor to explain the construction and operating principles of the special Pulp Type American Continuous Filter, which was developed by the United Filter Corporation very largely on the basis of experimental data obtained in the Abitibi mill.

Figure 1 illustrates the largest size pulp type American filter so far constructed, and consists essentially of eight filter disks 9 ft. diameter and covered with Fourdrinier wire or other suitable filter medium.

These disks are assembled around a hollow cast-iron center shaft, which is mounted on a supporting frame and directly connected to a drive motor through a worm gear and speed reducer.

A heavy sheet-steel tank is supported from the same main frame that carries the center shaft and disks. When this tank is filled with stock or white water, the disks are submerged to a point well above their horizontal center line.

The hollow center shaft terminates in a rotary plug valve, which is so constructed that at all times its discharge port or opening connects only with the submerged portion of the

filter disks. A fairly high degree of vacuum is constantly maintained on the discharge opening of the filter valve by means of either a wet or dry vacuum pump or barometric leg. Since the corresponding port in the filter valve connects through conduits in the center shaft directly with the filter disks, the interior of the latter are likewise under vacuum.

It should be carefully noted, however, that each disk is formed of ten separate and independent V-shaped sectors, and the design of the valve is such that vacuum is applied only to the completely submerged sectors of each disk.

With the tank kept full of feed, and the center shaft and disks rotating at a very low speed, usually one to two revolutions per minute, a large quantity of water is constantly sucked through the filter disks, along the center-shaft conduits, and discharged through the outlet on the filter valve. At the same time, a sheet or layer of fiber is deposited on the submerged portions of the disks. Depending on the nature and density of feed being handled, this sheet of pulp acquires a thickness of from $\frac{1}{8}$" to $\frac{1}{2}$" before the disks emerge; but it adheres firmly to the wire surface until reaching a roller doctor, located just above the point at which the disks submerge. The doctor effects a perfectly clean removal of thick stock, thus exposing the bare wire for the next revolution.

Differences Between Filter and Decker

While at first glance the operating principle of the American filter may appear somewhat similar to that of an ordinary save-all or decker, there are three vital differences which account for the far greater clarity of the effluent from the filter. These differences are: slow speed of rotation; high vacuum maintained; and the mechanical construction of the filter disks. In this connection, it should be remembered that vacuum is merely a term expressing difference in pressure, and that rate of filtration is roughly proportional to the pressure that produces it.

A pulp type of American filter ordinarily operates under a vacuum of from 15" to 25" of mercury; but to secure an equivalent filtration pressure and capacity with an ordinarily save-all, depending entirely on submergence of the cylinder or drum, would require a head of water from 17 ft. to 28 ft. above the drum. This, of course, would be entirely impractical, as the hydraulic head must always be less than the diameter of the cylinder, although in certain types this is

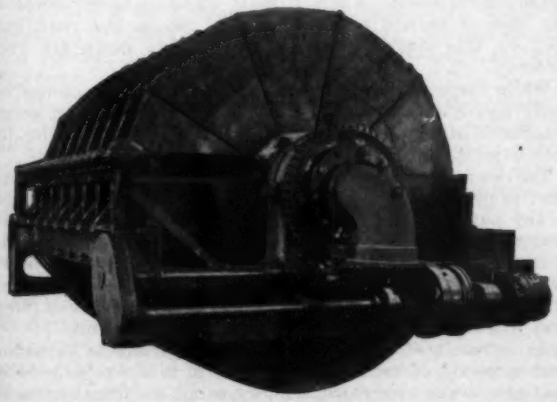


Fig. 2.—9 ft. diameter—8 disc American Continuous Filter. End view showing filtrate outlet and direct motor drive arrangement

supplemented with a very low vacuum carried within the drum. As a consequence, the effective filtration pressure on the filter is many times that of an ordinary save-all or decker. It is because of this relatively high filtration pressure that the filter can be rotated at a speed of only one to two revolutions per minute, compared with seven to ten for a save-all, and still maintain a surprisingly high rate of flow through the resulting thick sheet of stock.

Consider for a moment the operation of a single sector in the filter disks. Just as it completely submerges, the full vacuum is automatically applied through the rotating filter valve, and filtration begins. Almost instantly, a layer of fiber is deposited over the entire surface; this forms an ideal filter medium of steadily increasing thickness and efficiency. In other words, after the first moment of submergence, it is the sheet or mat of pulp that serves as the real filtering medium, and not the wire itself.

The construction of a sector is such that it is impossible for any water or stock to short circuit or escape through the filter without first passing the pulp mat covering the wire. This entirely eliminates the stock loss that so often occurs

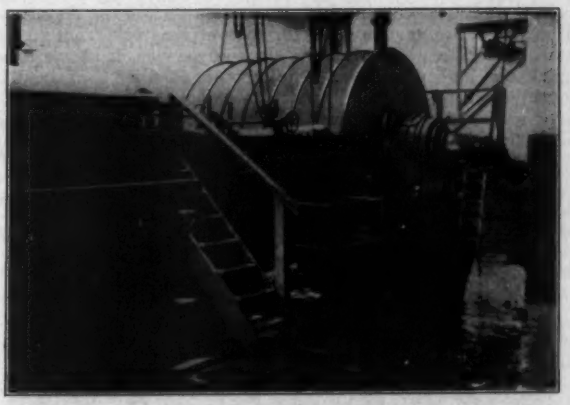


Fig. 3—Paper Pulp Type American Continuous Filter thickening groundwood slush at Abitibi Power & Paper Co., Ltd., Iroquois Falls, Ont., Canada

past the deckle straps and around the ends of a save-all drum.

The Abitibi installation consists of a 9-ft. diameter, 8-disk, pulp-type, American continuous filter, vacuum receiver tank, 32-ft. barometric leg, and dry vacuum pump. The leg terminates in a seal box at its lower end, equipped with weir and automatic device for accurately measuring and recording the flow. With the vacuum pump running, a 25" vacuum is maintained; and under these conditions, the filter has a capacity of from 2,200 to 2,400 gal. per min. of thin groundwood stock delivered at densities of approximately 4.5 per cent to 4.8 per cent. This is equivalent to from 60 to 65 tons bone-dry tons of stock per 24 hours; and four or five of their ordinary groundwood deckers would be required to handle the same quantity.

The filter operates equally well with the vacuum pump shut down entirely; but under this condition, the vacuum drops to 18" or 20", and the capacity is reduced about 15 per cent to 20 per cent, or to 50 to 55 tons of stock per day. In this case, of course, the barometer leg serves to produce the vacuum and withdraw the filtered effluent, which is discharged direct to sewer.

The drive motor on the filter itself takes approximately 10 h.p., and an additional 10 h.p. is required for the dry vacuum pump. With the latter shut down and the filter operating on barometric leg alone, the total power required for the installation is therefore only 10 h.p., which is extremely low when its capacity is considered. The thick stock is discharged at a density of 8 per cent; and before being sent to the stock chest, it is diluted with thin stock to 3 per cent in a cut and foldest flight conveyor, located immediately below the filter tank.

In addition to thickening the quantities of stock indicated, the installation has reduced the amount of fiber formerly sent to sewer in the same quantity of white water by approximately 5 tons per day. This saving alone would well justify the installation, entirely aside from its large thickening capacity.

The American filter is even more efficient as a thickener for sulphite stock, and has a capacity of 4,000 to 5,000 gal. per min. at the usual densities of 0.20 per cent to 0.35 per cent. In terms of bone-dry stock, this amounts to 60 to 85 tons per 24 hours. The thick sulphite stock is discharged at from 5 per cent to 6 per cent density, while the consistency of the effluent is surprisingly low; usually around 0.10 lb. (.0012 per cent) to 0.20 lb. (.0024 per cent) per 1,000 gal.; in some

cases, it is as low as 0.05 lb. (.0006 per cent) per 1,000 gal.

As the result of preliminary tests with an experimental unit, the Powell River Co., Ltd., are preparing to install an American Filter for deckering approximately 65 tons of sulphite stock in the enlargement to their mill at Powell River, B. C., which is now under construction. From the figures just mentioned, it is apparent that their fiber loss in sulphite white water will be practically reduced to zero.

Filter as White Water Save-All

Still another very interesting application of the American filter, is its use as a save-all for recovering stock from paper-machine white water; on this class of service, it shows a remarkably high efficiency. The amount of fiber contained in machine white water is usually too small for the formation of a satisfactory sheet on the filter disks, as previously described; this deficiency is made up by the addition of a small

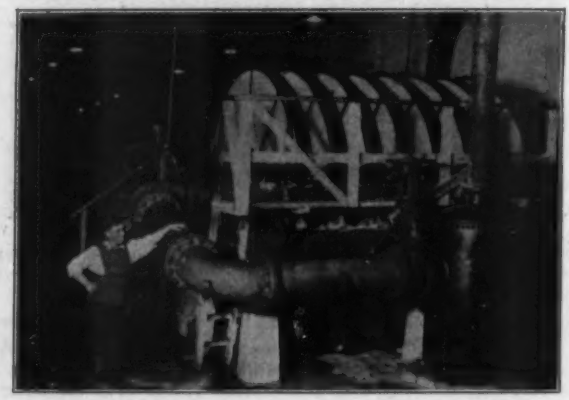


Fig. 4.—Paper Pulp Type American Continuous Filter operating as groundwood decker

percentage of machine furnish, which is usually available at a density around 3 per cent. Upon filtration of this mixture, all of the stock added, as well as from 90 per cent to 98 per cent of that originally in the white water, is immediately recovered in suitable condition for returning directly to the machine chest.

This method lends itself particularly well to the requirements of a mill making different colored papers. There is a very small quantity of material in the entire save-all system, and it can be quickly cleaned up and made ready for another color. Also, having an individual filter for each paper machine, entirely solves the formerly difficult recovery problem presented by several machines in the same mill running on different colored papers at the same time.

The filtered white water is practically clear, and it can be re-used on machine showers or elsewhere without the least danger of plugging difficulties. Particularly in the case of mills where water is scarce, the resulting reduction in fresh water addition is a valuable feature.

On the other hand, when water is plentiful, the extremely low consistency of the filtered effluent permits washing out the system with a large quantity of fresh water, but without the heavy stock loss caused by this practice.

In many instances, the re-use of filtered white water for machine showers has the further advantage of conserving and returning to the machine most of the filler, sizing, color, etc., which would otherwise be wasted to sewer. Since there is often a difference of 16 deg. to 30 deg. in the temperature between incoming fresh water and that in the mill, the re-use of the latter also means a substantial heat saving.

By using the American filter as a save-all, it is possible to recover from 90 per cent to 95 per cent of the fiber in news machine white water, and from 95 per cent to 98 per cent in the case of machines making tissue or other chemical fiber paper. Both of the large news machines being installed in the Powell River Co.'s new mill will be equipped with American filter save-alls, each having capacity of 2,200 gal. per min.

Within the very near future two American filters will be put into operation in a large mill in the States as combined save-alls and bleach washers. The machine white water carries considerable amounts of clay filler as well as fiber, and to this will be added and mixed all of the bleached sulphite stock prior to filtration. The latter gives an excellent felting action on the filter disks, and preliminary tests showed that in addition to delivering filtered effluent containing only 0.05 lb. per 100 gal., a perfect wash is obtained on the bleached stock.

Summary

The chief advantages of the American filter, as compared with the various types of deckers and save-alls now in general use, may be briefly summarized as follows:

1. A relatively small amount of floor space is required. For instance, an 8-disk filter having a capacity of from 2,000 to 5,000 gal. per min. on groundwood and sulphite, respectively, occupies less than 12 ft. x 20 ft. In the case of a new mill to be completely equipped with filters, this allows a material saving in the cost of the building.

2. The power required for an American Filter installation compares very favorably with that for ordinary deckers and save-alls; and when a barometric leg of reasonable length can be used, it is decidedly lower.

3. The construction of the filter disk permits changing a worn wire with scarcely any interference with filter operation. A few extra sectors covered with fresh wire are kept on hand, and one of these can be substituted for a worn sector in the filter disk in a few minutes' time. The latter can then be recovered at leisure, independently of the filter. This feature has the added advantage of economizing on wire, since only the piece that actually contains a hole or worn spot is discarded, and the covering on one side of a sector represents less than 1 per cent of the total wire area on the filter.

4. The thickened stock is discharged at a very uniform density, which simplifies the subsequent problems of consistency regulation.

5. The filter is very flexible as to capacity, since it can be furnished with any desired number of disks, from one to ten. This gives a choice of sizes ranging in capacities from 250 to 6,000 gal. per min.

6. Largely because of its slow speed of rotation and heavy, rugged construction, the American filter has shown very low maintenance and repair costs in the many other industries where it is widely usel. The duty is particularly severe in metallurgical plants, where it must stand up under continuous 24-hour service practically every day in the year, but, even on this class of service, the repairs costs are very nominal.

While there has not yet been sufficient time to secure reliable figure on maintenance in paper mill service, it seems reasonable to expect that this item will prove to be in line with experience in other fields.

The ways in which the American filter can be best and most profitably applied to the problem of white water waste in any particular mill, depend, of course, on the general arrangement, flow sheet, and other local conditions. When the source and magnitude of losses have been accurately determined, however, it then becomes simply a dollars and cents problem of working out the particular arrangements of filters that will show the largest return on the investment.

As a result of investigations and experiments extending over a period of more than two years, it is our firm belief that practically any paper mill, by using the filtration methods here described, can reduce their total losses in effluent to 1 per cent or less on production, depending on the ability of the system to take the recovered fiber. When this condition has been realized in all, or even a majority, of the mills of Canada and the United States, it is evident that a very large amount of money that is now being allowed to run to waste, will be directed into more profitable channels.

J. d'A. Clark, who holds the Sir Robert Blair Fellowship of London, is visiting some of the larger pulp and paper plants in the south. Under the terms of the Fellowship, holders are privileged to continue their technical studies in foreign countries and Mr. Clark has for the past six years been engaged in research work with the Canada Paper Company, Windsor Mills, Quebec. He returns to London next month.

Modern Soda Mill Operation *

As Exemplified in the Plant of the Tonawanda Paper Company

By WILLIAM CAULDWELL MUNRO, B. Sc.

Chemical Engineer, Tonawanda Paper Company, Tonawanda, N. Y.

THE plant of the Tonawanda Paper Company, Incorporated, is located in North Tonawanda, N. Y., midway between Buffalo and Niagara Falls. It is a subsidiary of the Chicago Tribune Company, and is engaged in the manufacture of book and rotogravure papers. Because the plant site is adjacent to a navigable part of the Niagara River, boats from points east and west on the Great Lakes are able to dock at its wharves.

The mill buildings are of steel and concrete construction throughout, with exception of the soda mill and store-house, which are of steel, sheeted with corrugated iron.

The soda pulp used in the manufacture of the paper is made at the mill; the sulphite and groundwood pulp requirements are purchased. Inasmuch as the soda pulp is made in a mill which is perhaps the most complete modern installation, the major portion of this paper will be devoted to a description of this part of the plant.

Soda pulp, as you are well aware, is made by the digestion of wood chips with sodium hydroxide under the influence of temperature and pressure. The woods which adapt themselves most readily to successful treatment by this process belong to the deciduous family, the poplar member being the most widely used. Birch also can be successfully treated to yield economically a very satisfactory pulp. Canadian and United States forests contain a large proportion of the aforementioned species of wood, especially birch. It seems to me that Canada has not developed the soda pulp industry to the extent it should have been developed were it not for international rather than economic reasons. Although the Southern United States have large supplies of cotton-wood and gum woods, which give a good soda pulp, it will not be long before the Canadian pulp and paper industry realizes the opportunities that exist in the manufacture of soda pulp for home consumption and export.

The soda pulp mill may be divided, for clearer explanation, into five sections or departments.

(1) The Wood Preparation Department.—The wood-room receives the wood from storage or railway cars and prepares and delivers it in chip form to the storage tanks above the digesters.

(2) The Caustic Liquor and Lime Recovery Department.—In the caustic department a reaction between sodium carbonate, quicklime and water is productive of sodium hydroxide or caustic cooking liquor, which is drawn from storage to the digesters and calcium carbonate which is reclaimed as quicklime or calcium oxide.

(3) The Cooking and Washing Departments.—The wood chips are acted upon by the liquor in digesters. The pulp and black liquor, products of the reaction, are blown into a blow-tank from which they are pumped, and separated by Mount rotary washers.

(4) The Black Ash Recovery Department.—The black liquor, the resultant by-product of the digestion, is evaporated to a thick consistency and then burned in rotary incinerators by producer gas. The product, called black ash, consists of approximately 80 per cent sodium carbonate and 20 per cent carbon, and is utilized again in the reaction to produce caustic liquor.

(5) The Bleaching Department.—The pulp is taken from storage after leaving the washers and is diluted, screened, thickened, bleached, washed and held in storage for the beaters.

The Wood Preparation Department

The wood is either washed or disc barked according to its needs, chipped by means of a Union Iron Works ninety-inch, three-knife, chipper equipped with a Woods breaker, elevated to a Ryther and Pringle Arpeko chip screen, running with perfect mechanical balance. The coarse rejects from the screen are sent through a Carthage chip breaker and then re-screened. The fines from the screen are blown, together with the waste from the disc barkers, to the black ash recovery department, where they are burned under the recovery furnace boilers.

The chips are elevated by air to the steel cylindrical chip tanks above the digesters at a total height of 110 feet by means of an Allington Curtis Positive Blowing System. In this system, the chips do not come into direct contact with a blower fan but fall into one of the pockets of a rotating cylinder, from which they are blown when the cylinder revolves to expose the pocket to the air blast. This system as installed, has a capacity of approximately ten cords per hour, and is driven by a fifty horsepower motor. It works to perfection.

The Caustic Liquor Room

The equipment for making the cooking liquor was designed and built or supplied under the direction of W. D. Mount, of Lynchburg, Virginia. It had been applied to the manufacture of caustic soda and in part to the manufacture of soda pulp cooking liquor before, but never, in its entirety, to the making of caustic liquor for soda pulp.

The equipment consists of two mechanically agitated steel plate mixing tanks, each of 10,000 gallons capacity; a continuous causticizer of sufficient capacity to handle the liquor for a mill of 100 tons daily production; a steel plate decanter of 40,000 gallons capacity, ample for the needs of a seventy-ton mill; two rotary lime sludge filters, a lime kiln seven feet in diameter and one hundred and ten feet long, fired from a Morgan gas producer; pumps, piping, vacuum exhauster, etc., also included.

Black ash and reclaimed lime are brought in the same conveyor from their respective sources, elevated, and discharged into either of the two mixing tanks. The black ash is not leached. Solid sodium carbonate in powdered form, and quicklime, are added in quantities necessary to compensate for losses. At present, as the soda ash recovery is 90 per cent and the lime recovery is 82 per cent, from 140 to 150 pounds each of soda ash and lime per ton of pulp produced are sufficient. Crystalline sulphur is introduced; it is found to increase the yield of pulp somewhat, probably due to the reducing action of the polysulphides, in eliminating the production of oxycellulose. A soft, silky texture is also imparted to the pulp. From 0.2 per cent to 0.5 per cent of sulphur is added, based on the weight of total liquor.

While one tank is being made up, the other is being discharged, having reached from 70 to 75 per cent causticity. The mixture is pumped through a Mount continuous causticizer in which the causticity can readily be brought up as desired, preferably 85 to 90 per cent. Tanks at 73 per cent causticity and 180° Fahrenheit have been run through the causticizer in a little over half an hour, the resultant being 89 per cent causticity and 210° Fahrenheit.

From the causticizer, the mix is pumped to the decanter, where the causticity increases slightly. The calcium carbonate sludge and carbon settle. The sodium hydroxide caustic cooking liquor flows over the launder ring around the top of the decanter and hence to a storage tank by gravity. The liquor in storage is kept at approximately 90 per cent causticity and contains about four and one-half pounds of sodium hydroxide per cubic foot.

No difficulty is experienced with the setting of the lime sludge and carbon provided the burning of the black ash and lime is carefully controlled. The use of the continuous causticizer undoubtedly aids the settling.

Lime sludge and carbon, about 25 per cent by weight of solids, are pumped to two 6′ x 3′ Mount rotary lime filters of the single compartment type, which are run in tandem. The sludge is washed by hot water supplied from the cooling water of the causticizer condenser, augmented from the hot water storage tank. Eighteen to twenty inches of vacuum are carried on the filters. A cake one inch thick, 60 to 70 per cent bone dry, containing about 0.5 per cent sodium hydroxide, with practically no free calcium oxide can easily be obtained.

* Presented before the Technical Section of the Canadian Pulp and Paper Association, Montreal, January 27, 1926.

The filters in tandem will handle around two thousand pounds of bone dry sludge per square foot of surface per twenty-four hours. The filtrate from the lime filters is returned to the decanter. The lime containing about 10 per cent of carbon, falls into a rotary lime kiln. The kiln has a lining of Cil-o-cel brick between the fire brick lining and the shell of the kiln for its entire length, excepting the first six feet from the firing end. The lime is burned very uniformly by producer gas supplied from a Morgan gas producer equipped with a Chowning Regulator. No trace of carbon has been found in the burned lime.

The Cooking and Washing Departments

The cooking equipment consists of three 10′ x 41′ Blaw Knox hammer-welded, steel digesters, magnesia asbestos covered and equipped with Morterud indirect cooking systems.

The digesters are cooked with a maximum temperature of 365° Fahrenheit and pressure of 110 pounds. They can be turned over in a little less than six hours, yielding about six and a half tons of pulp per digester; which gives a capacity of seventy tons per day to the mill.

The pulp is blown under pressure into a cyclone separator, from which it falls into a tank. Black liquor from storage is pumped into the separator during the blow. The unwashed stock and black liquor are pumped by two Rumsey plunger pumps to the battery of two Mount rotary washers. The consistency is kept at approximately 2 per cent by addition of black liquor to the blow tank, and a regulating box. The supply pans on the washers have continuous overflows back to the blow tank, which add additional capacity to the washers and provide a means of circulation in the blow tank where no agitator is used.

The Mount pulp washers are of the sectional drum type, six feet in diameter with a four-foot face, operating under from ten to fifteen inches of vacuum. The face of each washer is divided into twelve compartments, each compartment being connected to the valves encircling the axis of the washer on either side, by two pipes, one to a side. These twelve compartments are grouped into three sections or washing zones by the action of the valves as the washer rotates.

For example, let us follow a compartment in one section as it passes through a revolution or cycle of the washer. To start, the pulp has just left the wire covering the compartment in question. For a second, it is blank, then is submerged in the supply of unwashed pulp, and the vacuum comes on. Strong black liquor about 11 to 12° Baumé is pulled through into the compartment to the valve, which directs it to the strong black liquor discharge pipe and hence to the main foaming liquor trap. As the compartment rises covered with a cake of pulp three-quarters to one inch in thickness, a wash of weak black liquor 6 to 7° Baumé is sprayed upon it. This first wash is pulled through to the valve and discharged into the first-wash pipe, which conducts it to the main trap, along with the strong black liquor and hence to the black liquor storage tank. One-third of a revolution is taken up with the first-wash operation. Then, the compartment and its cake of pulp are in the second-wash zone.

Hot water comprises the second-wash medium. The water, after passing through the pulp into the valve, is discharged through the second-wash pipe to a foam trap, from which it is pumped to an elevated storage tank to be used for first wash. Any excess of first-wash liquor is held in storage and used to give volume to the digester liquor charge for the insurance of proper circulation with the Morterud system. No appreciable effect has been noticed in the bleaching qualities of the pulp by the addition of the make-up black liquor. The pulp is taken from the washers by doctors and is delivered about 18 per cent bone dry to a trough, where it is diluted with water, and then flows by gravity to a storage tank.

This system washes the pulp very clean. Tests give a loss of only 6.25 pounds of sodium carbonate per ton of bone dry pulp. The production of the washer unit has been limited somewhat owing to the fact that the capacity of the liquor handling equipment was overestimated. From the results that are now being obtained, it is believed that the washers will handle about one thousand pounds of air dry stock per square foot of washer surface per twenty-four hours when the main liquor trap is enlarged.

The Black Ash Recovery Department

The black liquor is pumped from the concrete storage tank of eighty-five thousand gallons capacity to dilute the stock in the blow tank, and to the Swenson quadruple effect evaporator continuously.

The liquor is heated and passes into the second effect of the evaporator at about 10° Baumé. Subsequently through the third and fourth effects, hence to the first effect, on which is carried 10 pounds pressure of exhaust steam. The liquor is drawn from the first effect at a density of from 32° to 35° Baumé, and is pumped to a storage tank with an overflow to the main black liquor storage tank.

The evaporated liquor is allowed to flow from storage by gravity, as required, into the three rotary incinerator units, where it is converted by combustion to what is commonly known as black ash.

The rotary incinerators set horizontally, are 9′ x 24′ in size, lined with common red and fire brick, the lining being stepped. The incinerators are fired by producer gas which allows of very economical operation inasmuch as the gas can be controlled readily. This is necessary as once the incinerator is hot the amount of gas can be considerably reduced for a time since the organic matter in the liquor aids its own combustion.

A 125-horsepower H. R. T. boiler is set between each incinerator and the stack, to utilize as much of the heat as possible. These boilers are connected through a check valve to the main digester steam line, furnishing steam at 125 pounds pressure to assist in cooking.

A self-supporting steel stack 225 feet in height furnishes draft for the three units. Very little stack loss of alkali is experienced.

The black ash, which comes from the kiln in a red-hot condition, is composed of approximately 80 per cent sodium carbonate and 20 per cent carbon; small amounts of sodium sulphide and insoluble matter are included. The ash falls into a chain conveyor and is transported to the caustic liquor room. The reclaimed lime from the kiln falls into the same conveyor with the black ash. The two, with any make-up lime or soda ash, are elevated and charged into the mixing tanks.

The Bleaching Department

The washed pulp is drawn from storage, and diluted and screened by a battery of four fourteen-plate flat screens.

The stock from the screens is approximately 0.5 per cent consistency. This is raised to 2 per cent by an Oliver 8′ x 10′ rotary pre-thickener. The stock is then piped to two 6′ x 10′ Oliver thickeners which raises it to about 18 per cent consistency. When the stock leaves the thickener, a screw conveyor takes it to one of three Fletcher-type Wolf bleachers. Bleach liquor is added to the pulp before it enters the bleachers. The stock is bleached, by the aid of a small amount of steam in winter, with from 8 per cent to 10 per cent of 35 per cent bleach, at an average consistency of 15 per cent.

After bleaching, the charge is dumped into an agitated tank beneath the bleachers. Upon dilution it is pumped to two 6′ x 10′ Oliver washers, washed free of chlorides, and held in storage for the beaters or wet machine.

Electricity is the motive power throughout the mill. Motors are direct connected wherever possible. For the most part the electricity is generated by a 500 kilowatt turbogenerator driven by steam supplied from the main boiler house. The steam exhausted at ten pounds pressure is utilized by the evaporators, mixing tanks, causticizer, etc., and provides as well a supply of hot water for washing and recovery furnace boiler feed water. In addition the returns from the Morterud heaters and evaporators are piped to the hot water supply.

A trip of inspection through the mill impresses one with its compactness, simplicity and small labor demand. The area occupied by the entire plant, from wood to bleached pulp, is thirty thousand square feet. A mill of the same capacity using the batch system of causticizing would require eleven thousand square feet for causticizing and lime sludge wash tanks alone.

Exclusive of the men employed in the wood room, eighteen men are used per shift for the entire operation. This number will possibly be reduced to sixteen men. The wood room

operates only during the day and employs fourteen men. Four men are used for maintenance, repairs and oiling. This number will be reduced also when the plant is thoroughly broken in.

Points of Difference Over Previous Practice

The mill differs in three main points from previous soda mill practice.

(1) In the Mount continuous causticizing system and lime-recovery plant by which the following advantages are gained over the batch system: (a) The process being continuous, the efficiency obtained from the equipment is high; (b) the space occupied by the liquor-making equipment and the lime-recovery equipment together is less than two-thirds the area required by a liquor-making plant alone if the batch system were used; (c) the simplified operation with consequent reduction of piping, fittings, pumps, tanks, etc.; (d) the system is practically closed, hence the alkali loss is reduced to a minimum; (e) the plant can be kept clean and orderly; (f) the process lends itself readily to positive regulation and control; (g) no live steam is required and the quantity of exhaust steam in comparison is very small.

(2) The use of reclaimed unleached black ash directly eliminates the leaching cells, with their consequent demands and losses, and converts a bothersome by-product, difficult to dispose of, into one of value since the carbon provides a certain fuel valve in the lime kiln.

(3) The Mount rotary pulp washers in the place of diffusers or wash pans save much space, equipment, time and labor and in addition wash the pulp more efficiently and in a manner that makes it possible to observe how the pulp is washed, producing a cleaner pulp and a stronger black liquor—which means less alkali loss, less bleach and less steam in evaporation.

The Beater Room

The purchased sulphite pulp is shredded, bleached, washed and held in storage for the beaters. The purchased groundwood pulp is added to the beaters direct, as required.

The beating equipment consists of six Jones beaters, driven in pairs by 200-horsepower synchronous motors with Lenix drives. Two Jones Majestic jordans in the beater room, and two in the machine room which are so placed in the system that the machine tender can readily make any necessary adjustments to the stock just before it goes to the machine, constitute the jordan equipment.

The Machine Room

One 204" and one 210" Rice, Barton and Fales Fourdrinier paper machine, each operating at 520 feet per minute, produce together about 125 tons of machine finish book and rotogravure paper a day.

These machines are driven by General Electric electric drives equipped with the recently developed speed regulators.

The D. C. electric current for the machines is supplied by two G. E. Curtis turbogenerators, No. 1, being 500 kilowatts, and No. 2 300 kilowatts. The exhaust from the turbines is used in the dryers and then returned to the Cochrane deaerator in the boiler house.

SKF ball bearings are fitted to all the rolls except the couch roll, press rolls, main dryers and felt dryers and calender rolls.

Boivin stock regulators, Devine wire oscillators, Millspaugh suction couch rolls, Pope reels and Stickles drying systems constitute the major equipment to mention on the two machines.

Boiler House

Mention should be made of the boiler house where two 1,000-horsepower Badenhausen boilers fired by Combustion Engineering pulverized fuel systems are operating under operating conditions at normal rating with an over-all efficiency of 89 to 90 per cent.

The semi-centennial of Forestry occurs this year. Charles Lathrop Pack, president of the American Tree Association, calls attention to this fact and is celebrating the occasion by the publication of a book for free distribution written in a popular vein, entitled "The Forestry Primer."

Paperboard Industries Association Holds Successful Meeting

In the first meeting of the year members of the Paperboard Industries Association convened in group sessions at the Congress Hotel, Chicago, on Wednesday, January 20th, and Thursday, January 21st.

Meetings of the individual groups, Paperboard, Container and Folding Box, were held on Wednesday, while on the following day all members of the three groups convened in a joint session.

President Fletcher M. Durbin presided at the general meeting, while Vice-president Walter P. Paepcke presided at the Paperboard Group Meeting; Vice-president J. P. Brunt, at the Container Group Meeting; and Vice-president A. C. Osborn at the Folding Box Group Meeting.

All sessions were well attended, members remaining in session until late in the afternoon on each day.

That the formation of the Paperboard Industries Association, which succeeded to the activities of the former Box Board, National Container, and Folding Box Associations, was a logical and constructive step, is evidenced by the excellent attendance at the meeting and the enthusiasm displayed by members. The program of activities adopted by the Association at its meeting in New York City last November is well under way.

Float Governs New Steam Trap

An improvement in the way of steam traps has been put on the market recently. It is called a condensation eliminator and is said to be applicable to any steam trap service, especially high pressures. The particular feature of the apparatus consists in the use of a float, as shown in the accompanying

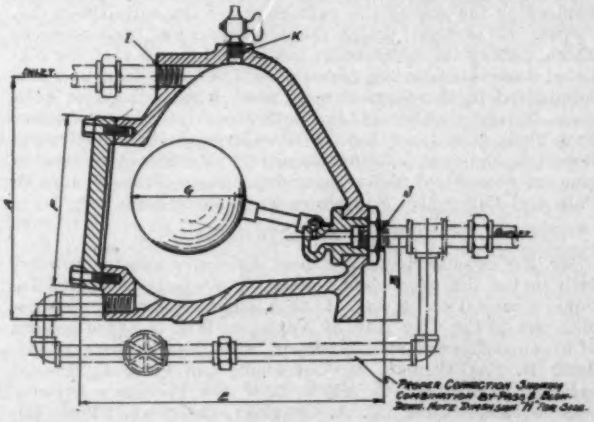


illustration. Equalization of pressures between the inside and outside of the float prevents it from collapsing. An equalizing tube within the float communicates with the surrounding pressure through holes in the top of float hooded to prevent water infiltration. This tubes terminates close to the bottom of the float so that a small collection of moisture will seal it, so as to entrap air or gas and assure float buoyancy, the general principle being that of the inverted bell.

Any condensate is discharged as the float rises, at the same time causing any accumulations of air or gas to be expelled. What will particularly appeal to the pulp or paper mill engineer in this apparatus is its simplicity of design. Its possible applications in paper manufacture will be apparent on an inspection of the accompanying diagram.

New Use for Waste Liquor

A patent has been taken out on a method of utilizing waste sulphite liquor in the manufacture of a foam-forming fire extinguisher. This fire extinguisher is intended to contain in dispersion the residue of neutralized and evaporated sulphite waste liquor.

The patentee is G. J. Esselen, Jr., of Swampscott, Mass., who has assigned his rights to Badger Fire Extinguisher Company, Boston.

Penn.-New Jersey Supers Organize

Form New Division of American Pulp and Paper Mill Superintendents' Association

ANOTHER regional division of the American Pulp and Paper Mill Superintendents' Association was formed at Philadelphia on Saturday, February 6, with the organization of the Pennsylvania-New Jersey Division, the eleventh of the series, at a meeting in the Benjamin Franklin, one of Philadelphia's newest and largest hotels.

E. T. A. Coughlin, National President, faced between fifty and sixty members and visitors when he started the proceedings at 10:30 o'clock, Saturday morning. Beside him on the platform were James G. Ramsey, chairman of the Organization Committee, and Robert L. Eminger, national secretary.

Excellent Program

The program of meeting on which the committee on organization had worked earnestly for several weeks previously was creditable to all concerned. Mr. Ramsey, on whom had fallen the lion's share of the work, is manager and superintendent of the "Flat Rock Mill" of Dill & Collins Company, at Manayunk, near Philadelphia. He was generally congratulated on the success of his efforts. He opened the meeting and called on Mr. Coughlin to preside.

Welcome by National President

In a welcoming speech, Mr. Coughlin congratulated Mr. Ramsey on the size of the gathering and the enthusiasm displayed. He sketched briefly the development of the movement which, having its inception at the annual meeting of the National Association in Niagara Falls, N. Y., last year, had now culminated in the formation of what was destined to be a great division that would take in the superintendents of lower New York, as well as those of New Jersey and Pennsylvania. Robert L. Eminger, national secretary, was then introduced to give an account of the aims and purposes of the American Pulp and Paper Mill Superintendents Association.

History of the Divisions

Mr. Eminger said the new local division would be the eleventh in the list of divisions since the formation of the National Association on June 4, 1919, when twelve superintendents met in the City Hall of Appleton, Wis., adopted a form of organization and elected officers, with Fred C. Boyce, president; D. F. O'Connell, vice-president, and Peter J. Massey, secretary-treasurer. A month later the Michigan Division was formed, with E. T. A. Coughlin, chairman. Then followed the organization of other divisions, as follows:

Northwestern Division, at Green Bay, Wis., July 31, 1919.

Miami Valley Division, Hamilton, Ohio, December 6, 1919.

Northeastern Division, Portland, Me., April 21, 1920.

Northern New York Division, Watertown, N. Y., April 23, 1920.

Canadian Division, Toronto, Canada, 1920.

Connecticut Valley Division, Holyoke, Mass., November 18, 1922.

Western Board Division, 1923.

Southern Division, New Orleans, La., April 17, 1924.

Southeastern Division, Richmond, Va., April 24, 1925.

Conventions had been held annually for the past six years and the membership of the Association is in excess of 500.

Touching on the advantages of membership in reply to an oft-repeated query as to "What good will come to me by joining this Association?" and "What will it do for me?" he said:

"Have you ever stopped to think of the many improvements that have been developed in the past ten years in your work as superintendent? Have you realized the part your fellow superintendents have played in bringing about these new and improved methods? There must have been some ideas gathered from the papers read and experiences encountered by others that led us into the modern ideas that are daily coming to you through our association."

Mr. Eminger then spoke of the necessity of being alert to find new and better ways of manufacturing pulp and paper. Owners of mills had invested their money with the idea of making a better sheet of paper than they did a few years back, and they also want more pounds of product for their investment.

In the early days of the American Pulp and Paper Mill Superintendents' Association, the executives of mills were distrustful of it, because they had been misinformed as to its aims and purposes. They regarded it mistakenly as a sort of union to demand increased pay and special privileges, never realizing at first that the "share your knowledge" idea, the swapping of ideas and experiences among superintendents would bring about improved quality and increased production of their mills. This has all been changed, however, and the executives of mills now realize that good has resulted and they now give their encouragement and support to the association.

Quotes Norman Wilson

Mr. Eminger quoted what Norman W. Wilson, vice-president of the Hammermill Paper Company and president of the American Paper and Pulp Association said at the annual meeting in Niagara Falls:

"What I saw this morning, at lunch time and practically all during the day, convinced me that you surely have accomplished the first object—men coming, I presume, from far separated points, greeting each other affectionately. It was with real joy, there could be no mistake about it—and I presume that out of the better acquaintanceship and the friendships which you have been making during these six years have come frequent visits back and forth to each other's properties and mills; and out of that surely great good must come.

"Let me inject this, please. We hear that our country is being over-associated; that there are too many societies; that there are too many clubs, too much expense involved. I presume there is some truth to it; but it is my opinion that any association that justifies its existence from a thorough membership, so as to be able to speak for the industry, and that does carry on constructive work, has a right to exist and must exist."

Mr. Eminger said the association keeps in constant touch with the activities of other associations affiliated, like the Superintendents' Association, with the American Paper and Pulp Association, and he instanced the Technical Association, the Cost Association, the Salesmen's Association and the Supply and Equipment Association.

Among other activities of the association, Mr. Eminger instanced furthering the work of vocational education in connection with the Technical Association and by contact with several state universities where young men are being trained in the art of pulp and paper manufacture, in foremanship and other branches of the utmost importance to our industry. He also spoke of the efforts being made to solve the problem of white water losses and stream pollution.

New Wire Tying Machine

The next item on the program was a paper illustrated by lantern slides showing developments in the wrapping and tying of paper with wire for skid shipments, the author being W. M. Purdy, General Sales Manager of the Gerrard Wire Tying Machines Company, Chicago. He said that printers expressed a preference for shipments of sheet paper on skids owing to ease of handling. The explanation was that a skid could accommodate four or five thousand pounds of

paper, about eighteen or nineteen reams, an amount which would require eight to ten wooden boxes if packed in that way. Then skids fastened with wire cost only $3.50 to $5.00 to make and they may be used over and over again. The cost of wire was stated at 40 to 60 cents a skid, depending upon the size of the skid. It was much more expensive to ship paper in boxes, the cost being stated at $20 to $24 for the boxes, plus the labor cost for nailing and strapping.

Mr. Purdy said there was a saving in packing costs of $16 to $18 on two to two and one-half tons of paper.

The wire is applied, tensioned, tied and cut in a series of simple operation by a new tying and cutting apparatus of small size called the Gerrard Model G or Little Giant Machine which can be operated by a lad of ordinary strength. The machine could be used box strapping, typing paper on skids and for tying carloads of roll stock, with the elimination of braces. All of these uses were shown in a most instructive series of moving pictures, the hall being darkened for the purpose.

In the discussion which followed, it was brought out by Albert Lester, of the New Jersey Coated Paper Company, who was the first to use skids, that with the use of the wire tying device, a skid could be made to take smaller sizes of paper than the area of the skid, holes being bored at suitable points to accomplish this.

Paper Mill Wastes

George D. Bearce, engineer, New Print Service Bureau, New York, was to have been the next speaker, the subject allotted to him being, "Conservation of Waste in Paper Mills," but as explained by T. J. Keenan, Associate Editor of THE PAPER INDUSTRY, who was asked to respond for him, Mr. Bearce had been obliged to cancel his engagement on account of sickness in his family.

Character of Waste Liquors

After discussing the general character of the waste matter discharged from pulp and paper mills, Mr. Keenan said there were few, if any, really poisonous waste liquors. It was well known that fish throve and grew fat in some mill wastes, even in those parts of the country where anglers have protested most vigorously against the pouring of mill effluents into streams. The worst of the spent liquors act by combining with the oxygen in the water of rivers and streams, thus depriving the fish of a most essential element to life. However, there was an economic aspect to the matter. Every superintendent should be on his toes at all times to prevent waste and the discharge into watercourses of white water from paper mills and of certain liquors from pulp mills, as this meant an extravagant loss of material that could be prevented.

Coöperation with State Authorities

The importance of co-operating with State authorities who are investigating stream pollution was something that needed to be particularly emphasized, for unless every disposition were shown to work with the State authorities in suppressing unnecessary stream pollution, the authorities were likely to take drastic action. He touched briefly on the various forms of save-alls and clarifiers in use and mentioned the latest form of clarifier and thickener for white water, that manufactured by the Hardinge Company, of York, Pa.

Waste Difficult of Recovery

L. M. Booth, of the Booth Chemical Company, took part in the discussion which followed. Some mill effluents could, he said, be treated at a nice profit, while there was nothing but loss connected with others. The most difficult waste to handle was spent sulphite liquor. Soda mill waste was easily treated for the recovery of soda.

A pressing problem still unsolved was the recovery of stock from deinked paper and the waste water from rags. Nobody had yet produced a marketable product from the wastes mentioned.

Unfair Comparisons

J. G. Ramsey made a practical contribution to the subject, saying it was unfair to compare the production and losses from stock of one mill with another until all conditions were known. One would never get the same clay retention with 30 per cent sulphite as with 60 per cent, and so on.

Chairman Coughlin quoted a statement by McBain concerning a mill that passed its effluent through a 1-inch pipe. This to indicate the low amount of waste leaving the mill.

Before adjourning for luncheon at 12:30 a Committee on Nominations was appointed consisting of Thomas F. Martin, chairman; O. V. Yates, J. W. Outerson and John Bingham.

AFTERNOON SITTING

Production of Rosin and Rosin Size

The meeting was reconvened at 3 o'clock. After a statement by Chairman Coughlin that all but two of the eligible superintendents present had signed applications for membership in the new division, E. J. Johnstone, of the Paper Makers' Chemical Company, Holyoke, Mass., projected a series of moving pictures on a screen, showing the steps taken in the production of rosin from the tree and its conversion into rosin size. He prefaced the pictures with a highly informing talk concerning the grading of rosin and the preferred qualities for the preparation of size, which were limited to the grades from G to D inclusive. He gave a reason for the advance in price of rosin and naval stores generally, saying that drouth had interfered with production in the Gulf States and the land boom in Florida had attracted large numbers of negro workers to that State. The Paper Makers' Chemical Company had recently acquired large tracts of land in the South, not for the purpose of building a paper mill as had been erroneously reported, but in order to conserve good sources of their basic material, the pure gum rosin.

Wood Rosin Also Used

Large quantities of so-called wood rosin were produced by extraction processes, in addition to the cupping and boxing method, and both this extracted rosin and rosin taken from stumps were equally serviceable in the manufacture of rosin size, despite what anybody might say to the contrary. The exposure of the films occupied the entire afternoon but the exhibition was never tedious and everybody stayed till the end.

The Voith High Pressure Stock Inlet

The regular program was then continued, Harry Bennett, eastern manager of the Valley Iron Works being called upon to present his paper on the Voith High Pressure Stock Inlet. This was described in brief as a device to provide an improved method of feeding stock to the wire. To obtain a paper product of good quality, it was necessary, he said, to insure delivery of the stock from headbox to wire in a sheet of uniform depth across the entire width of the wire. This is secured in the Voith inlet by the use of an adjustable orifice or nozzle for feeding the stock on the wire, the stock being distributed or falling into the discharge nozzle through a perforated roll, driven at 15 r. p. m., irrespective of the speed at which the wire might be traveling.

Speeding Up on Heavy Paper

Mr. Bennet said there were upwards of 100 inlets in use in the United States and an equal number in Europe, making about 250 installations in all. The inlet was operating in this country on paper varying in weight from 9 lb. up to 144 lb. and at speeds varying from 90 f. p. m. to 800 f. p. m. The inlet is said to work particularly well with heavy papers, the speaker instancing a paper of 144 lb. formerly made with slices at 70 f. p. m., which had been speeded up to 94 f. p. m. after an inlet had been attached to the machine.

Running a Machine Without Deckle Straps

A short discussion followed on the elimination of deckle straps. Mr. Bennett took a conservative stand on this question. He said the deckleless device was still in the experimental stage and he could only report progress. The substitution of a spray cutting method had been found to work satisfactorily in some mills and he knew of several other devices for the elimination of deckle straps which worked well on machines equipped with the Voith High Stock Inlet.

S. Carrol Wentz, of P. H. Glatfelter Paper Mills, Spring Grove, Pa., said he had four machines operating without deckle straps and without a spray to cut the edge, such as is used in the Valley Iron Works device.

Election of Officers

As the hour was getting late, Chairman Coughlin closed the discussion by calling for the report of the Nominating

Committee. Thomas F. Martin, chairman, responded with the following slate:

Chairman, James G. Ramsey, manager and superintendent, Dill & Collins Company.

Vice-Chairmen, Thomas F. Martin, Hamersley Manufacturing Company, Garfield, N. J.; J. W. Outerson, Paterson Parchment Paper Company, Modena, Pa.; John A. Bowers, Hammermill Paper Company, Erie, Pa.

Secretary, O. V. Yates, Diamond State Fibre Company, Bridgeport, Pa.

Treasurer, Ward M. Smith, Philadelphia Paper Company, Manayunk, Pa.

Board of Governors, John Bingham, S. C. Wentz, Charles H. Kephart, W. Allan Lindsay, J. E. Blosser.

Convention Committee, Charles L. Ellis, J. R. Roberts, Frank E. Winslow.

On motion duly seconded, the foregoing officers were elected by one affirmative ballot.

Before adjourning several of the newly elected officers, including Mr. Ramsay, made acknowledgment of the honor implied in their election, and that fine old stalwart from Massachusetts, Charles A. Mooney, of the Smith Paper Company, made a forceful plea to the members of the new division for the united support and backing of their officers. From his observations during the meeting, he was convinced that the Pennsylvania-New Jersey Division was to be the banner organization of the National Association.

Closed by a Banquet

This successful organization meeting was brought to a fitting close by a sumptuous banquet and entertainment in the Crystal Ball Room of the Benjamin Franklin. President James G. Ramsey, presided and introduced W. H. Lloyd, who acted as toastmaster. The principal address was made by the Rev. Ralph W. Sockman, of New York, who took as his theme the matching of Man Power Against Horse Power. No individual or society was safe unless the forces of control equaled those of the drive, said he, in making a plea for a slowing down of the restless haste of modern times. He spoke very eloquently and held the interested attention of his audience to the last, eliciting a laugh from time to time with an apt anecdote.

Registered at the Superintendent's Meeting

Among those present and registered at the organization meeting of the Pennsylvania-New Jersey Division were the following: Joseph H. Auman, Dill & Collins Co., Manayunk, Pa.; J. E. Blosser, Scott Paper Co., Chester, Pa.; James M. Bolton, The Lubriko Co., Philadelphia; M. C. Burrell, Orr Felt & Blanket Co., Piqua, Ohio; J. H. Burwell, E. I. duPont de Nemours Company, Wilmington, Del.; Harry Bennett, Valley Iron Works, Appleton, Wis.; L. M. Booth, Booth Chemical Co., Elizabeth, N. J.; Harold Bing, Paper & Textile Co., Sandusky, Ohio; E. F. Driscoll, Valley Mill, Lee, Mass.; I. H. Dow, Eastwood Wire Co., Belleville, N. J.; H. C. Couch and J. G. Ellison, Consumers' Box Board Co., Philadelphia; J. C. Dieffenderfer Paper Makers' Chemical Co., Easton, Pa.; R. L. Eminger, Miami Paper Co., Miamisburg, Ohio; H. W. Engle, McDowell Paper Mills, Manayunk, Pa.; Chas. L. Ellis, Dowingtown Manufacturing Co., Downingtown, Pa.; C. Fairbanks, Scott Paper Co., Chester, Pa.; E. C. Gildenzopf, Congoleum Nairn Co., Asbestos, Md.; C. J. Gordon, Gerrard Wire Tying Machines Co., Chicago; H. F. Hazel, Orr Felt & Blanket Co., Piqua, Ohio; E. J. Hammerly, Goodrich Rubber Co., Akron, Ohio; A. S. Hooper, and J. P. Hanson, Dill & Collins Company, Manayunk; J. W. McClenaghan, Dill & Collins Co., Manayunk; W. H. Gage, The Lubriko Co., Philadelphia; W. Greely, F. C. Huyck & Sons Co., Albany, N. Y.; Gosta Hallberg, National Aniline Company, Philadelphia; Chas. H. Kepbart, York Haven Paper Co., York Haven, Pa.; C. E. Kinney, Hercules Powder Co., Wilmington, Del.; Robert Knowles, Reading Paper Mills, Reading, Pa.; E. J. Kron, Sweet Bros. Paper Mfg. Co., Phoenix, N. Y.; E. J. Johnstone, Paper Makers Chemical Co., Holyoke, Mass.; Thomas J. Keenan, The Paper Industry, New York; Conrad Kern, Moore & White Co., Philadelphia; W. Allen Lindsay, Keystone Paper Mills Co., Darby, Pa.; Albert Lester, New Jersey Coated Paper Co., Montclair, N. J.; John Lobb, Scott Paper Co., Chester, Pa.; Charles N. Mooney, Eagle Mill, Lee, Mass.; Frank Mackey, Newark, Del.; Thos. F. Martin, Hammerley Paper Co., Garfield, N. J.; Bayard Lindall, F. H. Morrissey, Schuler & Benninghof; A. Larsen, Gerrard Wire Tying Machines Co., Chicago; J. W. Outerson, Paterson Parchment Paper Co., Modena, Pa.; J. W. Oblenger, Tarentum Paper Co., Tarentum, Pa.; Frank Petersen, Ajax Paper Mills, Buck Run, Pa.; F. L. Petersen, Bicking Paper Mfg. Co.; A. C. Petersen, Consumers Box Board Co., Philadelphia; S. A. Pardee, R. & J. Dick Co., Philadelphia; M. Pitts, York Haven Co., York Haven, Pa.; L. D. Post, The Paper Mill, New York; J. T. Pusey, Dill & Collins Co., Philadelphia; W. M. Ourdy, Gerrard Wire Tying Machines Co., Chicago; J. G. Ramsey, Dill & Collins Co., Manayunk; Walter S. Rooney; Albany Felt Co., Albany, N. Y.; H. S. Shellington, Baeder Adamson Co., Philadelphia; R. C. Stewart, Shartle Bros. Machine Co., Middletown, Ohio; William Snyder, U. S. Paper Mill, Chambersburg, Pa.; Ward M. Smith, Philadelphia Paper Co., Manayunk, Pa.; J. C. Schmidt, E. I. duPont de Nemours Co., Philadelphia; J. R. Roberts, E. I. duPont de Nemours Co., Wilmington, Del.; J. E. Snell, Paper Makers' Chemical Co., Easton, Pa.; Joe Wagner, C. B. Daring Co.; S. C. Wentz, Spring Grove, Pa.; J. Bertwell White, National Vulcanized Fibre Co., Yorklyn, Del.; Frank E. Winslow, General Elec. Co., Philadelphia; Philip I. Weir, Little Falles Paper Co., Newburgh, N. Y.; M. Turner, the Lubriko Co., Philadelphia.

I. J. Witham

Mr. I. J. Witham, kraft mill superintendent of the Bogalusa Paper Company, Bogalusa, La., passed away in that city on January 18th, following an operation for appendicitis.

Mr. Witham was the son of George S. Witham, Sr., general manager of the Union Bag & Paper Corporation, Hudson Falls, N. Y., who is also the author of the recognized standard book entitled "Modern Pulp and Paper Making." He was much beloved by his associates in the Bogalusa kraft paper mill, and through his knowledge of the business, attentive and conscientious care and hard work, he helped to organize what is conceded to be the safest and best equipped mill in the South.

Mr. Witham started in the electrical engineering business when he was about fifteen years of age. He continued successfully in this line of work for about eight years when the desire to enter the calling of his father and become a paper manufacturer, prompted him to make the sacrifice of stepping back into the ranks and working his way up as a papermaker. He began on the rewinder.

His experience in the electrical line up to this time having been in the power departments of pulp and paper mills, gave him considerable advantage which stood him in good stead as a paper manufacturer, and when he started as a rewinder he made very good progress and earned promotions. After having reached the position of foreman in the Cheboygan, Mich., mill of the Union Bag & Paper Corporation, he accepted a position as superintendent for the Hercules Paper Co., at Cornwall-on-the-Hudson. After conducting this mill for one year, he was engaged to take charge of the Advance Bag & Paper Co., at Howland, Maine, where he stayed about three years. About that time, the Bogalusa Paper Co. had started to erect a modern, up-to-date kraft mill. On account of his experience with the Union Bag & Paper Corp., he was engaged as superintendent of this new mill.

Mr. Witham's remains were brought to Hudson Falls, where he was laid to rest beside his mother in the Union Cemetery there. The surviving relatives are his wife and three sons, George, Reginald and Louis of Bogalusa; two sisters, Mrs. A. G. Caldwell, of Aurora, Colo., and Mrs. Dana Cannon, of Hartford, Conn.; one brother, George S. Witham, Jr., and his father, both of Hudson Falls, N. Y. The two oldest boys are following in their father's footsteps in the paper manufacturing industry.

G. Howard Boddy has been appointed district representative of the Pittsburgh Piping & Equipment Co., with offices in the General Motors Building, Detroit, Mich.

Aims and Purposes of the Supply and Equipment Association

Is a Definite and Important Part of the Paper Industry

WHEN a group of firms whose products enter largely into the use of one particular industry, proposes and decides to co-operate with that industry in a common effort to solve the problems which beset it, nothing short of great mutual benefit is held in store for them. Such an idea was the stimulus in the formation of the Supply and Equipment Association, Inc., of the American Paper and Pulp Industry, which was organized in New York City on February 1, 1925. Thirty-five firms made up the membership on that date and this has now been increased to an enrollment of seventy-four.

A common ground of activity, a real need for unified action, must be present in an industry to warrant satisfactory organized effort. Trade associations have been formed to meet specific needs, and they have come as a permanent development in American industry because they are filling a definite need. In the early days, the trade association was more or less of a social organization, but its function has now changed to that of an effective business organization carrying on a fundamental work necessary to the protection and perpetuation of industry.

One of the great problems common to all who depend entirely or in part on the permanency and prosperity of the American paper industry, is that of the competition which is facing them in this country and abroad, and the need for a broader market as an outlet for increasing production.

Since the American Paper and Pulp Association is the only agency through which the paper industry can present a united front on important national and state questions which affect its permanency and prosperity, it was seen by the founders of the Supply and Equipment Association, that concerted action by the friends of the paper industry, working in close co-operation with the American Paper and Pulp Association, was the only way in which the industry as a whole could present this united front. That this is correct is demonstrated by the endorsement of the policy and purposes of the association by the well known firms who make up their membership.

Platform of the Association

The platform of the Supply and Equipment Association, Inc., of the American Paper and Pulp Industry, consists of the following purposes:

Co-operation with the Executive Committee of the American Paper and Pulp Association.

Co-operation with the Woodlands Section and other divisions of the American Paper and Pulp Association.

Co-ordination of the constructive activities of the allied industries and the manufacturers of paper and pulp.

Co-operation with the manufacturers to eliminate production wastes.

Investigation of the essential production processes in the manufacture of pulp and paper to decrease the cost of production.

Co-operation in the cause of safety-first.

Collection of accurate information concerning the raw materials used in the manufacture of paper and pulp.

Co-operation to obtain just traffic rates for shipment of supplies and equipment and finished product to and from the pulp and paper mills of the United States.

Co-operation to prevent adverse legislation affecting the American paper industry.

Co-operation to prevent unfair foreign competition.

General and Unified Support Essential to Success

The organization of the Supply and Equipment Association by the companies selling to the paper industry is a definite step forward, and should help materially to stabilize prosperity in every branch of the industry. The first essential for the success of the association is the active and energetic support of every company selling supplies and equipment to the industry. A good start has been made, but now it is essential that all members of the allied industries should rally to the cause which will cement the relationship between the supply and equipment companies and their friends, the manufacturers of paper and pulp.

At the first annual meeting of the association held in New York City on October 15, 1925, Mr. Norman W. Wilson, president of the American Paper and Pulp Association, said in part: "We welcome most sincerely the work that you are doing and the platform upon which you are going. We would like you to know that if you care to have it done, a very close arrangement can be had so that whenever we have a problem we could give it to you or when we take a position we know it is not only the paper and pulp manufacturers' and all of our general membership, but it also coincides with what you believe should be done.

"If there is one thing that I want you to know, it is that we cordially and sincerely welcome the opportunity to work with you, and if we do not come up to the scatch at any time in the future, the thing we want above all is that you tell us about it at the proper time in the proper way, and we would like to have the privilege of working that way with you."

At the same meeting Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association said in part: "We are very keenly appreciative of the assistance which you have already given us, and we want you to feel that we are with you in what you are proposing to do. You are a very definite and a very important part of this great industry of which we are all a part. There is a great field of work before you, and you can assist us all in working out the common problems of the entire industry."

The office of the Supply and Equipment Association, Inc., of the American Paper and Pulp Industry is at 33 Rector street, New York City, where applications for membership should be addressed. Mr. W. N. Wilkinson is president and Mr. A. C. Dunham is secretary-treasurer.

Federal Tax Dates

Samuel Newberger & Co., accountants, 38 Park Row, New York City, have issued a "Calendar of Important Tax Dates for 1926" prepared by them. In it the Federal tax dates for 1926 are listed as follows:

March 15—Federal income tax returns for individuals, corporations, partnerships and estates to be filed with collector of internal revenue. (Fiscal year returns due 75 days after close of fiscal year.) Penalty attached for failure to file returns. Returns of information as to payments to employees due. First quarterly installment of 1925 Federal income tax due (total amount optional).

June 15—Second quarterly installment of 1925 Federal income tax due. Withholding agents must pay tax withheld.

July 1—Federal capital stock tax returns must be filed by corporations any time after July 1st and up to July 31st.

July 31—Federal occupational return and tax due.

Sept. 15—Third quarterly payment of 1925 Federal income tax due.

Dec. 15—Final installment of 1925 Federal income tax due.

W. C. Hamilton & Sons, manufacturers of fine papers of Miquon, Pa., just outside Philadelphia, have removed their New York sales offices to the Metropolitan Tower Building, No. 1 Madison avenue. The larger offices were made necessary by the growing business of the company in the metropolitan territory which is managed by Spencer J. Blake.

This plant of the Atwater Kent Mfg. Co., at Philadelphia, famous makers of Radio and other electrical apparatus, covers a ground area of more than 20 acres.

Interior view of the huge Atwater Kent plant. Walls and ceilings have been given long-lasting, lustrous whiteness by painting with Barreled Sunlight—washable as tile.

World-famous Radio Manufacturer paints with Barreled Sunlight

Atwater Kent joins the thousands of industrials that use this lustrous, washable white paint for ceilings and walls • • •

THE Atwater Kent reputation has been built up—and broadcast—by the efficiency of Atwater Kent products. A reputation for the skilled application of science to practical use.

Barreled Sunlight was used for painting ceilings and walls in this manufacturer's great plant, shown above—a plant covering more acreage than 10 football fields! What determined this choice—here and in thousands of other plants in every line?

First—There is a saving in application—for Barreled Sunlight flows on freely with brush or spray, at the lowest cost per square foot of surface covered, making the finished job cost less.

Second—Barreled Sunlight is *washable.* Its satin-smooth surface has no pores to hold dirt—and no roughness to wear away under repeated washings.

Third—The lustrous surface of Barreled Sunlight reflects just the right quality of working light—free from glare.

Fourth—Made by the exclusive Rice Process, Barreled Sunlight is guaranteed to remain white longer than any gloss paint or enamel, domestic or foreign, applied under the same conditions—also, not to flake or scale if properly applied.

Sold in 55- and 30-gallon churn-equipped steel drums, and in cans from ½ pint to 5 gallons. Where more than one coat is required, use Barreled Sunlight Undercoat first. Note coupon below.

U. S. GUTTA PERCHA PAINT CO.
Factory and Main Offices
2 Dudley Street, Providence, R. I.
New York—350 Madison Ave. Chicago—659 Washington Blvd.
San Francisco—156 Eddy Street
Distributors in all principal cities

U. S. GUTTA PERCHA PAINT CO.,
2 Dudley Street, Providence, R. I.

Please send us your booklet "More Light", and a painted sample of Barreled Sunlight.

Name.....

Street.....

City..... State.....

THE RICE PROCESS WHITE

Barreled Sunlight
Reg. U. S. Pat. Off.

Power Week in Chicago

First Annual Midwest Power Conference and Power Exposition Is Great Success

CHICAGO is the power center of the United States. In the five-hundred mile area surrounding Chicago, more power is produced by a larger number of power-generating stations than can be found in any other section of similar size. The metropolis is, furthermore, either the home of, or central to, the majority of power plant equipment manufacturers. These two facts, weighed in the balance of good judgment and found authentic, impelled six related associations to stage the first annual Midwest Power Conference and Power Exposition in the Furniture Mart Building, Chicago, during the week of January 26th to 30th. And it was those same two facts that contributed so heavily to the outstanding success of both events. Not only was the conference exceptionally well attended, but the Power Exposition approximated two hundred exhibitors—a total far in excess of the first New York show, which is a fact significant in itself of the logic of location. Indeed, many of the exhibitors and not a few of the engineers who had seen both shows, the Power Exposition of Chicago and the recent Power Show of New York, said unhesitatingly that the exposition of last month was far more successful, particularly in the matter of sales, than the December New York show.

It is probable that the Power Exposition cannot be better characterized than to say it was a huge, living catalogue of modern power plant equipment and that it was an assemblage of good business enthusiasts. It was a catalogue wherein one might inspect each item of equipment intimately, where one might secure information regarding methods or processes from experts whose knowledge is the result of long association with their particular phase of power plant practice, and where one might imbibe as much or as little of the enthusiasm for the ensuing year as would best meet the individual requirements. Even the most superficial examination of the power equipment displayed along "Power Boulevard," the name aptly applied to the main aisle, was sufficient to explain why our production of coal has dropped simultaneously with tremendously augmented power requirements. From 1850 to 1910 our production of coal increased 200 per cent every ten years, but from 1910 to 1920 it increased only 20 per cent, while during the past five years coal production has dropped slightly. The amazing array of power equipment at the Furniture Mart in Chicago during the last week of January is the reason. Wasteful methods cannot obtain against the scientifically designed and technically correct instruments and appliances that have been developed during the past few years; many of them within the last year or eighteen months.

Some manufacturers demonstrated their machines by units in actual operation; others, whose assembled products are too large to permit of housing in the showroom, displayed miniatures built to exact dimension; while still others demonstrated through the medium of motion pictures. The show brought out what was new in pulverized-coal equipment of every type, air pre-heaters, stokers, water-cooled furnace walls, draft apparatus and other appliances designed to increase the effectiveness of combustion or economy of fuel. Particularly attractive were the exhibits of boiler room instruments, some of which were arranged on master control boards. Valves of all types for the higher pressures and temperatures, regulators, and other devices for power plant economy commanded the attention of the passing multitude. Contrary to the usual practice, many sales were made directly from the floor. Exhibitors there were whose signed orders, with confirming checks in hand, totaled well into the five figures, and none left the Mart the evening of the 29th without a note book full of prospects who had signified a real desire for additional information or an intention to buy "as soon as we are ready."

For the benefit of those who were not fortunate enough to attend the show and conference, and also to supplement the notes of those who attended, the following paragraphs describe, more or less in detail, those of the exhibits that were of particular interest to the paper and pulp industry.

Some of the Exhibits

Air Preheater Corp., New York City, displayed their line of eminently successful Ljungstrom air preheaters and Howden compressors. Featured also was their forced draft equipment and patent furnace fronts.

Alexander Brothers, Philadelphia, showed the Tentacular suction belt driving a generator. Details of construction were shown by special sample displays.

Allen-Sherman-Hoff Co., Philadelphia, maintained an exceptionally attractive booth in which was exhibited the Hydrojet system of ash handling. This was done by means of an ingenious model that revealed the action of the system.

Allis-Chalmers Co., Milwaukee, had on display their steam and gas engines, steam and hydraulic turbines, electrical machinery and transmission equipment. The "Texrope" drive was one of the features of this attractive exhibit.

American Arch Company, New York City, had a very effective display of their suspended renewable arches for furnaces.

American District Steam Co., North Tonawanda, N. Y., showed their system for underground steam and returned line construction, an attractive array of steam flow and condensation meters, traps, expansion joints, and other appliances.

American Electric Motors, Inc., Milwaukee, had on display a complete line of electric motors and auxiliary equipment.

American Steam Pump Co., Battle Creek, Michigan, maintained an exhibit of centrifugal and reciprogating feed-water pumps, as well as service, air, hydraulic pressure, and condensate pumps, and jet condensers.

Bailey Meter Company, Cleveland. This exhibit attracted considerable attention among engineers because of the splendid showing of meter control equipment for automatic boiler operation, which exhibit was in operation to show the method of control. Other displays in this booth were pulverized coal feeders and meter, and the Bailey furnace wall.

The Bayer Company, St. Louis, displayed the mechanical soot blowers, the operation of which could be seen through specially designed exhibit material.

R. H. Beaumont Co., Philadelphia, experts in the solution of coal handling problems, displayed, by model, their centralized coal handling systems. Another feature of this exhibit was the miniature cable drag scraper which was kept in operation storing and reclaiming coal. Power operated ash gates and copper steel ash hoppers were also displayed.

Bethlehem Shipbuilding Corp., Elizabeth, N. J., had on display both views and parts of oil-burning systems, feed heaters, evaporators and deaeration systems, compressors, and pumps.

Bethlehem Steel Company, Bethlehem, Pa., had on display not only Diesel engines but full-sized coal-pulverizing plants.

Boston Gear Works Sales Co., Chicago, showed speed reduction units, silent chain drives, and special gears. The exceptionally fine working model that was kept in operation to show the various types of gears attracted a great deal of attention.

Bristol Company, Waterbury, Conn., kept on display boiler room instruments such as indicating and recording gauges, pyrometers, thermometers, and water level gauges.

Brown Instrument Company, Philadelphia, had an attractive booth showing vacuum, draft and pressure gauges, electric CO^2 meters and pyrometers, the latter being not only

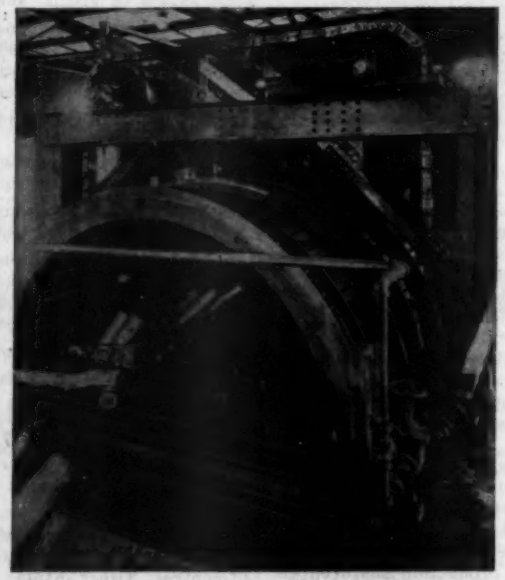
When Mill Owners Face the Facts About

DRUMS

THE BEST selling argument which will ever be advanced for any kind of equipment is the results it will produce. It is so with barking drums.

TO FIND the drum that will do good work for you, look for the drum that has done good work for others. Specifications will help you check the price. Only performance can justify the purchase.

TEN YEARS AGO, we sold our drums on the strength of how they were built. Today they are bought for what they will do. The U-bar is still the happy compromise between a sharp angle and a flat surface. It remains the reason for complete and perfect barking without bruising. And the chain-suspension still accounts for smooth operation at amazing speed. Compare this 128-point support with trunnions! So, through the list; six-inch pitch chains of special design, casehardened; guiderolls with chilled rims; full-toothed sprocket rings for complete traction; spring take-ups which not only function perfectly as such, but are perfect shock-absorbers that cushion every jar or jolt.



Discharge end of drum installed for Northern Ontario Light and Power Co., Ltd., Haileyburg, Ont.

ONLY AN ENGINEER can sense the integrity of our whole design. But many mill men have accepted it as such—have adopted this equipment to the exclusion of all other—and are profiting thereby.

WE GIVE complete data gladly. And state specifically the character and quantity of work each of our drums will produce. First, though, we like to have a prospective purchaser view an actual drum in operation. If it be in a mill where there is a drum of another make alongside, it affords an interesting comparison.

SEVENTEEN MILLS ordered our equipment in 1925. Some had drums of another make. Some already had our drums, and ordered more. *Nor were there seventeen mills—nor seven—outside of these we name who ordered barking drum equipment of any or all other kinds.*

HERE IS a list of purchasers of our drums in the year just past. It should be sufficient of itself. It *proves* which type of barking drum is the best to buy. If you have the vestige of a doubt, write any of these mills—or all!

DeGrasse Paper Co., Ogdensburg, N.Y. ..... 1-10'x30'
West Virginia Pulp & Paper Co., Covington, Va. 1-10'x30'
West Virginia Pulp & Paper Co., Williamsburg, Pa. 1- 8'x20'
St. Maurice Paper Co., Charlemange, Que. ..... 2-10'x30'
Wayagamack News, Ltd., Three Rivers, Que. .... 4-10'x30'
Metabetchouan Sulphite & Power Co., Ltd., Desbiens, Que. ..... 1-10'x30'
Oji Paper Mfg. Co., Ltd., Shibaku, Tokyo, Japan .... 1-10'x30'
Sande Traesliperi A/S., Oslo, Norway ..... 1- 8'x20'
Oregon Pulp & Paper Co., Salem, Oregon ..... 1- 8'x20'
Tonawanda Paper Co., Inc., N. Tonawanda, N.Y. 1- 8'x20'
Calcacieu Sulphate Paper Co., Elizabeth, La. ..... 1-10'x30'
Port Alfred Pulp & Paper Corp., Port Alfred, Que. 1-10'x20'
St. Regis Paper Co., Deferiat, N. Y. ..... 1-10'x30'
A.P.W. Pulp & Power Co., Ltd., Sheet Harbor, N.S. 1-10'x30'
Fletcher Paper Co., Alpena, Mich. ..... 1- 8'x30'
Central Paper Co., Muskegon, Mich. ..... 1-10'x30'
Powell River Co., Ltd., Powell River, B.C. ..... 2-10'x30'

22

Fibre · Making · Processes · Inc.

Chicago

recording and indicating but portable, long-distance thermometers, electric tachometers, and liquid level recorders.

Buffalo Forge Company, Buffalo, N. Y., had on display their full line of boiler feed pumps, "Breezo-Fin" heaters and "Carrier" air washers, as well as their ventilating and special induced draft fans.

Builders Iron Foundry, Providence, R. I. Here the "Venturi" meters and tubes were on display, and the type M register-indicator-recorder was in operation.

Burke Engineering Co., Chicago, had on display, in unique fashion, traveling grate stokers, fuel saving and smoke preventative furnaces and the U. S. rocking grates.

Carrick Engineering Company, Chicago, displayed their master-control system of furnace regulation. This was demonstrated by a glass inclosed working model and attracted considerable attention among the vistors.

Casey-Hedges Company, Chattanooga, Tenn. Water-tube boilers were the feature of this exhibit, the details of construction and the system for setting and baffling being visualized by unique cut-away arrangements made to the exhibited parts.

A. W. Cash Company, Decatur, Ill., showed furnace draft regulators, pressure regulating and reducing valves, relief valves, pump governors, as well as the Craig system of automatic combination control with master controller for draft fans, stoker engines and stack dampers.

Chapman Valve Mfg. Co., Indian Orchard, Mass., had on display chrome nickel steel fittings and valves for high pressures. Remote control systems were also shown which created a great deal of interest among executives and engineers in attendance.

Chicago Chemical Co., Chicago, displayed the K. W. S. system for water conditioning and treatment either in connection with softening plants or within the boilers.

Clarage Fan Co., Kalamazoo, Michigan, showed their vertical fan-drive engine and the high speed blower for forced drafts. The feature of this equipment is the ball-bearings which are mounted on outside supports and which have housings removable in sections.

Cleveland Worm and Gear Co., Cleveland. Speed-reducing units of the worm-gear type were displayed here.

Cokal Stoker Corp., of Chicago, had an attractive display in which a Cokal stoker was in operation by means of a quarter-horse motor.

Combustion Engineering Corp., New York City. This was a large exhibit and one that attracted a great deal of attention. Lopulco pulverized fuel burning systems, feeders, mills, burners, air heater elements, with details of various types of stokers, made up the exhibit.

Connery & Co., Philadelphia, showed supports and stiffer construction for breechings, uptakes and ducts. Asbestos packed cleanout doors and air-cooled dampers were also shown.

Coppus Engineering Company, of Worcester, Mass., displayed in excellent fashion the line of steam turbine and motor driven blowers, steam turbines, and turbo boiler feed pumps.

Crane and Company, Chicago, maintained a most attractive exhibit of valves and fittings, and high-pressure pipe joints, supplemented by a typical pipe connection for a 400 H. P. boiler.

Curtis and Curtis Co., Bridgeport, Pa., had on display the self-centering pipe threading machines, pipe cutting machines, pipe dies and other tools.

Cutler-Hammer Mfg. Co., Milwaukee. In this exhibit, which was most attractive, automatic alternating current motor starters were in operation. These were equipped with a brake to show the speed and load at which the current is thrown off. Large Dean valve control units operating valve by remote control were also shown.

G. M. Davis Regulator Co., Chicago, displayed, by specially constructed and illuminated models, their line of valves for pressure control, steam traps, float and balance valves, and stop cocks.

De Laval Separator Co., Chicago, displayed oil purifiers of various types and for all kinds of lubricating, fuel and insulating oils.

M. H. Detrick Co., Chicago, exhibited, by models and attractive views, suspended arch construction and sectional side wall furnace construction.

Detroit Stoker Company, Detroit, displayed the action and construction of the stoker by cut-away model and a series of interesting photo enlargements.

Diamond Power Specialty Corp., Detroit, showed their electrically-operated soot blower systems equipped with remote control. This exhibit was the center of a large group of interested engineers the majority of the time.

Joseph Dixon Crucible Co., Jersey City, N. J. Here were displayed a large variety of greases and oils, including the Ticonderoga flake and other special graphites, spring oil and rust solvents, silica-graphite and aluminum-graphite paints, red lead-graphite primers, and graphite greases.

Dodge Manufacturing Corp., Mishawaka, Ind., displayed the major features of their line of power transmission equipment and conveyor belt idlers, and Timken roller bearings.

Drake Non-Clinkering Furnace Block Co., Chicago, showed the block construction for furnace linings and bridge walls.

Edward Valve and Mfg. Co., East Chicago, Ind., maintained an exhibit of sectionalized fittings and valves, that were especially designed for severe high temperature or pressure conditions. The series of photographs on display formed an interesting auxiliary to this exhibit.

Ehret Magnesia Mfg. Co., Valley Forge, Pa. Special insulating material and 85 per cent magnesia were on display in block and sectional form.

Elliott Company, Pittsburgh. This exhibit occupied three booths and was an attractive display of deaerators, ejectors, steam turbines, tube cleaners, non-return valves, strainers, separators, and other pieces of equipment designed to minimize depreciation or effect economies in fuel.

Erie City Iron Works, Erie, Pa., showed a unit coal pulverizing and feeding unit in operation and as applied to a moderate sized plant.

Everlasting Valve Company, Jersey City, N. J. "Flatplug" and "Everlasting" valves were shown here as well as several sizes of regular and "Tamdem X" blowoff valves.

Fairbanks Morse Company, Chicago, displayed an attractive set-up of pumps, engines, motors, and other parts and details by illuminated, sectional models. The Diesel engine on display caused considerable comment and was the center of many earnest, serious groups of engineers seeking better and more economical power.

Fisher Governor Co., Marshalltown, Iowa. These people displayed governors for pumps, a large number and variety of valves, steam traps, and a liquid level controller equipped for remote operation and control.

Foster Engineering Co., Newark, N. J., showed a most complete line of valves of both pressure regulating and non-return types.

Foxboro, Inc., Foxboro, Mass., had on display pressure gauges and thermometers of the recording and indicating types, controllers and clocks for temperature, pressure and humidity, and a number of interesting photo-enlargements.

Fuller-Lehigh Company, Fullerton, Pa. This exhibit covered the space of four booths and was one of the features of Hall "A." Displayed here were various units of fuel pulverizing systems, including the pulverizer, dryer, feeders, conveying systems, and burners. These were for both standard and unit installations.

Furnace Engineering Company, New York City, showed an interesting line of unit pulverizers, air separators and fans.

General Electric Company, Schenectady, N. Y. One of the largest exhibits in the show, there was on display here rectifier tubes, brush shifting motors, flow meters in operation, air-cooling systems for turbine generators, and motor control equipment.

Graver Corporation, East Chicago, Ind., displayed a work-

LOBDELL

THREE prerequisites of a modern paper mill are • • •

[1]—LOBDELL Chilled Iron Rolls or Complete Machine Calender Stacks—a

[2]—LOBDELL Automatic Crowning Roll Grinding Machine and a

[3]—LOBDELL Improved Micrometer Roll Caliper.

LOBDELL Rolls have been the standard in the paper industry for over fifty years.

The LOBDELL Roll Grinding Machine is the only machine for this purpose that develops a perfect crown without a former or guide and has provision for leveling, prolonging the life of the machine indefinitely.

The LOBDELL Improved Micrometer Caliper is the lightest and most accurate instrument for testing rolls yet produced.

¶ All are fully illustrated and described on page 371 of the Paper and Pulp Mill Catalogue

¶ Write for your copy of booklet on the grinding, care and upkeep of Paper Mill Rolls

LOBDELL CAR WHEEL CO.

WILMINGTON, DELAWARE

ing model of a water softening system, together with a fine collection of detail and installation pictures.

Hagan Corporation, Pittsburgh, showed their combustion control systems; regulators for stokers, fans and drafts, were demonstrated; a system for steam purification was in operation, and boiler scale prevention systems were explained.

Harbison-Walker Refractories Co., Pittsburgh, displayed refractory brick, and both blocks and cement for furnace linings.

Heine Boiler Co., St. Louis, had on display the seamless forged steel headers as applied to the Heine Type "S" boiler.

Himelblau, Agazim & Co., Chicago, had on display an attractive line of pyrometers, thermometers, regulators, steam separators, blowers, traps, coolers, heaters, and other pieces of power plant equipment.

C. W. Hunt Co., West Brighton, N. Y., exhibited by models, photographs, and parts, their complete line of coal and ash handling equipment, which includes bucket conveyors, skip hoists, weigh larries, coal crackers, and industrial railway equipment.

Hyatt Roller Bearing Co., Newark, N. J. Anti-friction bearings of various kinds were on display here, as well as various pieces of power transmission equipment.

Hydraulic Press Mfg. Co., Mount Gilted, O. Drop forged steel fittings and valves for high pressure and temperature work were here displayed.

Ilg Electric Ventilating Co., Chicago, showed the major features of their line of power roof ventilators, self-cooled motor propelled fan, unit heaters, and the variable speed, 3-phase, a. c. motor.

Illinois Engineering Co., Chicago, maintained an exceptionally attractive exhibit of vapor heating systems, pressure reducing and back pressure valves, radiator traps, and other items of equipment.

International Filter Co., Chicago, had on display interesting models for water treatment and water softening.

International Nickle Co., New York City, maintained a booth at which there were displayed various parts made from Monel metal. The feature of the exhibit was the long list of products shown at the show which used that metal as an integral part.

Jenkins Brothers, New York City, showed several different types of valves in actual use by employing the regulation valve which had cut-away portions of glass port-holes for sight of the interior.

W. A. Jones Foundry and Machinery Co., Chicago, showed spur and worm gear reducers, the "Lemley" friction clutches, and various parts of other transmission equipment.

Kelly Valve Company, Muskegon, Mich., had on display a full line of standard and high pressure gauges.

George T. Ladd Co., Pittsburgh. The Ladd water-tube boiler was here shown in course of construction, special attention being called to the baffle tile.

Liptak Fire Brick Arch Co., Mexico, Mo., had on display air-cooled and solid furnace walls, and the double suspension arches.

Lunkenheimer Company, Cincinnati, exhibited a large collection of valves of various types and uses among which were non-return and electrically operated valves.

Marion Machine Foundry and Supply Company, Marion, Ind., showed rotary soot blowers for both tubular and water-tube boilers, as well as the "Gulf Stream" water heater.

Midwest Piping and Supply Co., St. Louis, displayed a line of pipe bends, ball and socket joints, welded headers, and the "Van Stone" and "Sargol" joints.

Moore Steam Turbine Company, Wellsville, N. Y. At this interesting exhibit could be seen single-stage turbine connected by flexible coupling to a two-stage double-suction centrifugal pump. Considerable interest in this exhibit was evidenced by the visitors.

Nash Engineering Co., South Norwalk, Conn., had a finely arranged exhibit displaying the Nash Hytor vacuum pump, Jennings Hytor vacuum heating pump, Jennings Special Flat Box Unit, and Jennings pulp ejector, supplemented by an unusually good collection of parts and photos.

Nitrose Company, Peoria, Ill., showed preservative paints for metals. The fact that these coverings militated successfully against corrosion, expansion, contraction and abrasion, created considerable interest among attendants to the show.

Norma-Hoffman Bearings Corp., Stamford, Conn., had on display roller, ball, and thrust bearings. Models in operation showed the construction and function of the bearings and proved the close measurements of the bearing parts.

Norton Company, Worcester, Mass. "Crystolon" and "Alundum" refractory pieces for special purposes were shown, and Crystolon refractory brick was shown as applied to a setting for a Riley stoker.

Pennsylvania Crusher Company, Philadelphia. Models of the Bradford breaker and Armorframe single-roll crushers were in operation at this exhibit. Steel built and Hammermill crushers were also shown.

Pittsburgh Piping and Equipment Company, Pittsburgh, showed the Sargo-Weld joints and explained the superiority of the welded construction made possible by their equipment for piping and headers.

Power Plant Specialty Co., Chicago, had on display feed-water treatment systems and equipment. Mr. Vater, representative for the company, stated extreme satisfaction with the show.

Power Specialty Company, New York City, displayed a line of superheaters and economizers. This exhibit covered the space of two booths and attracted much favorable attention.

Powers Regulator Co., Chicago, showed temperature control systems, regulators, thermometers and high-pressure steam traps.

Quigley Furnace Specialties Co., New York City, featured the Hytempite cement, the Quigley refractory gun for applying plastic refractories, acid-proof cement and protective coatings.

Ramsey Chain Company, Albany, N. Y., maintained an interesting exhibit of silent chain as power transmission, sprockets, and pinions. Details of the compensating joint were explained by means of enlarged models.

Reading Steel Castings Co., Bridgeport, Conn. Fittings of all kinds were shown here, the feature of the exhibit being globe and gate valves for high pressures. Globe, gate, angle and check valves were shown in both iron and bronze.

Reeves Pulley Co., Columbus, O., displayed variable speed transmissions, with both immediate and remote, electrical and mechanical controls. The new steel-link V-belt as power transmission created considerable interest.

Republic Flow Meters Co., Chicago, one of the larger exhibits in which there was on display, or in actual operation, meters of various types for coal, air, steam, and water; CO^2 recorders, draft indicators, and liquid level gauges.

Riley Stoker Corp., Worcester, Mass., had on display the Riley Artritor and the Harrington traveling link grate, both of which were open to expose the construction.

S-C Regulator Mfg. Co., Fostoria, Ohio, showed feed-water regulators and pump governors, for both high and low pressures.

Sarco Co., Inc., New York City, exhibited thermostatic systems and appliances for steam, steam traps, and parts that were cut-away to enable easy visualization of construction.

Sauerman Brothers, Chicago, maintained one of the most attractive working models, it being of a drag scraper for storing and reclaiming coal.

Schutte & Koerting Co., Philadelphia, had on display condensors, injectors, compressors, air and oil coolers, special valves, gear pumps and spray nozzles.

Simplex Valve & Meter Co., Philadelphia, had in actual operation a boiler feed water meter, supplemented by a display of indicating, recording and totalizing meters for condensate, circulating water, feed water, and other supplies.

SKF Industries, Inc., New York City, showed their line of ball bearings and power transmission line-shaft hangers.

Bowser R-P installation in plant of Lawrence Paper Mills, Three Rivers, Quebec

Calendar Roll Lubrication

TO insure full production calendar rolls require very complete and constant lubrication.

The standard Bowser-Richardson-Phenix units for calendar roll lubrication can be individually engineered to fit any requirements. Whether it be a battery of rolls, such as is here illustrated, or whether it be only one machine, Bowser lubrication engineers can supply the exactly-right systems that will insure adequate and economical lubrication—for dryer rolls as well as calendar.

R
OIL FILTERS
P
SCIENTIFIC LUBRICATION

S.F. BOWSER & COMPANY, Inc.
Dependable Pumps and Tanks
FORT WAYNE, INDIANA, U.S.A.

LUBRICATORS · OIL FILTERS · OILING SYSTEMS · ACCESSORIES
OIL STORAGE AND DISTRIBUTION SYSTEMS

Standard Oil Company (Indiana), exhibited their line of greases, oils, and explained methods for fitting lubricants to particular uses.

Strom Division, Martin-Rockwell Co., Chicago, showed their ball-bearing process for minimizing frictional resistance.

Strong Scott Mfg. Co., Minneapolis, had on display the Unipulvo coal pulverizing and combustion equipment.

B. F. Sturtevant Co., Boston. The feature of this exhibit was the turbine and Turbo-vane fans for forced and induced drafts. Air preheaters, ventilating fans, lead-coated economizers, and other equipment was also displayed.

The Superheater Co., New York City. "Elesco" superheater elements were on display here, the elements being for 1,500 H. P. boilers and showing forged return bends joining lengths and ball and clamp joints to headers.

W. O. & M. W. Talcott, Inc., Providence, R. I., had on display, and was busy explaining, their belt fasteners, belt hooks, and rivet inserted fasteners.

Timken Roller Bearing Company, Canton, Ohio, had on display a model of the steel mill which showed the steps and processes necessary in the fabrication of Timken bearings. This exhibit created considerable interest.

Troy Engine & Machine Company, Troy, Pa. By means of an ingenius model, the details of Troy engine construction was visualized and explained.

Vulcan Soot Cleaner Co., Du Bois, Pa., exhibited the heat resisting soot cleaner units, and had on display a valve operating cleaner head with integral, self-grinding disc valve, the element and valve being operated by a single control.

Walsh & Weidner Boiler Co., Chattanooga, Tenn., showed the seamless forged steel sectional boiler headers and explained by photographs and models the method for baffling.

Warren Webster & Co., Camden, N. J., showed a model, encased in glass, of the modulation system of steam heating.

Westinghouse Electric & Mfg. Co., East Pittsburg, Pa., maintained a large exhibit at which was shown steam turbines, ejectors, arresters, meters, switches, and equipment for reconditioning transformer and circuit breaker oils.

Wheeler Condenser & Engineering Co., Philadelphia, maintained an interesting exhibit of air pumps, condensers, evaporators, cooling towers, expansion joints, oil heaters, steam jet pumps and other related equipment.

Wright-Austin Company, Detroit, had on display the "Brownie" low-water signal tri-cock safety alarm, water columns, weight metal whistle valves, and similar equipment.

Yarnall-Waring Company, Philadelphia. Here was seen a most attractive display of V-notch meters for recording and intregating flood flow. The feature was a large column of water constantly flowing and falling and which kept the V-meter in operation.

A New, Watertight, Acid-Resisting, Remote Control Station

Quite frequently it is necessary to protect electrical apparatus against moisture, acid fumes, etc. To meet the requirements for this work the Cutler-Hammer Mfg. Company, Milwaukee, Wis., have brought out the control station shown on the accompanying photograph.

The mechanism is enclosed in a cast iron case, and has a cover fitted with a gasket, which excludes all moisture and fumes. A stuffing gland fitted to the shaft provides a tight joint, and the thick wall of the cast iron body allows enough threads for a tight conduit or pipe connection.

Contact is made on the brass cylinder by two heavy fingers of standard non-stubbing design. These fingers are mounted on asbestos lumber and are zinc plated as are all other small parts. The contact tips are of heavy bar rolled copper. The fingers are of sufficient capacity to permit the use of this master control station on any pilot circuit at all commercial voltages.

The large polished brass handle gives a convenient grip to the average operator. It extends far enough from the case to indicate whether the station is opened or closed. All parts are generously proportioned to reduce chances of breakage in rough or careless handling. The case is sprayed with a protecting paint to withstand submersion in water or the effect of acid fumes.

This station was first installed in a rubber factory, where chemical fumes attacked the ordinary station and control mechanism, necessitating frequent repairs. Since this new type station has been installed this difficulty has been overcome entirely.

Fifty Years of Telephone Progress

Harking Back to the Time When Every Phone Call Meant a Headache

IT IS just fifty years since the telephone was born and, as that fact comes to their attention, business men in every branch of industry are permitting themselves a quiet chuckle as they hark back to the days when a local call was a real adventure and a long distance call—horrors, what an ordeal!

Many who read these words can readily recall the day when a long distance telephone call, even from a point but a few hundred miles away, was so fearsome an event that the actual talking was delegated to the employe with the most stentorian voice and iron nerves.

As recently as the World's Fair period, 1893, the idea of speaking to far places thrilled even the operators who had their part in such feats. "Simply marvelous!" chorused the girls in one Middle West office as they gathered around an operator who was putting through a call to Boston.

Today, of course, thousands of such calls are made daily—from one city to another, from Great Lakes to the Gulf, from coast to coast. A veritable network of speech covers the nation.

On March 7, 1876, Professor Bell was granted his original patent for the speaking telephone. In October of the same year the first outdoor trial of the telephone was made. Professor Bell talked over two miles of telegraph wire to Thomas Watson, who was located in Cambridge. This, in a sense, was the first long distance call.

The founders of the new industry quickly realized the possibilities of linking distant centers of commerce and industry. A line from Boston to Providence, a distance of 45 miles, was opened in 1882. Difficulties of telephone transmission were here encountered that had not existed on the short lines. These were overcome by the efforts of young men who were allying themselves with the new industry.

More distant cities were steadily being connected. The Boston-New York line opened in 1884; New York and Chicago could converse by telephone in 1892; Denver was reached in 1911 and finally the circuits reached across the country to San Francisco in 1915.

At this time Alexander Graham Bell talked with Thomas A. Watson, his associate of the early days, over 3,400 miles of telephone line. In April, 1921, the Key West-Havana submarine telephone cable was placed in service, bringing all the principal places in the United States into communication with Havana and other cities in Cuba.

The passing of fifty years presents a story of remarkable progress. Today the Bell System's lines connect more than 16,000,000 instruments, with a total wire mileage of 44,500,000 miles. Over these wires there was an average of 46,000,000 telephone calls a day during 1925, of which the daily average of toll and long distance calls was approximately 2,400,000. Nearly 300,000 employes are enlisted under the familiar blue and white banner which floats from every Bell company building.

Fifty years ago the longest telephone call that could be made was over a line two miles long from Boston to Cambridge. Today a telephone call can be made from Catalina Island, in the Pacific Ocean off the shore of California, to Havana, Cuba, a distance of 5,500 miles.

ROOTS

These products are the means of low cost pumping service

Roots Rotary Pumps for water or pulp provide positive displacements without the use of Valves or other small parts. The cost of maintenance is practically nothing. The overall efficiency is 75 to 85 per cent.

Roots Rotary Pumps combine the simplicity of the centrifugal type with the economy and positive displacement characteristics of the reciprocating type.

Roots Vacuum Heating Pumps were designed for handling condensate and air from dryer rolls and return line heating systems.

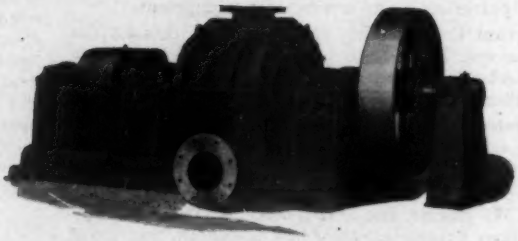
Roots blowers are used in paper mills for agitation of liquids, oil and gas burners, dandy rolls and calenders, and pneumatic conveying. Many blowers are now in service in paper mills installed for conveying wood chips.

Roots Vacuum Pumps were especially designed for the handling of air and water under ten to twenty inch vacuum from suction boxes and vacuum rolls.

Forms of Drive

Roots Rotary Vacuum Pumps can be arranged for any form of drive that is best suited for the installation. They are essentially slow speed machines and where steam is available they are best driven by means of flexible coupling from steam engines. They are ordinarily equipped with pulleys so that they can be belted to any convenient form of power. Where motor drive is required, some speed reduction is necessary, such as silent chain or gears. We recommend that your inquiry state the form of drive that you would prefer.

Bulletins on all or any particular pump may be had for the asking.



Large Volumes at Low Vacuums ---and Lower Power Costs

Lower costs! That's the point. Roots Vacuum Pumps handle large volumes without excessive size. They are low in first cost, require less power than reciprocating pumps at modern vacuums and cost practically nothing for maintenance.

Water is not churned around the case to cause excessive power without doing useful work.

Here is a pump designed particularly for paper mills, hence it comes the closest to fulfilling all requirements of the paper mill engineer.

Our engineering staff will gladly assist you in plans for adapting ROOTS Rotary Vacuum Pumps to suction boxes, Vacuum rolls.

Write for Bulletin P-114.

The P.H.&F.M. ROOTS CO.
DEPT. 18
CONNERSVILLE, IND.

Chicago Office 128 S. Michigan Ave.
New York Office Room 808-120 Liberty St.

News Briefs from Washington

REPORTS from the Consuls and Commercial Attaches of the Department of Commerce received during the past month emphasize the following conditions in the paper industry abroad:

France Offers Market for Paper and Pulp.—The British Trade Commissioner at Paris recently forwarded to his government a comprehensive report on the French pulp and paper market in which he states that France will be able to take increasing quantities of both chemical and mechanical pulp, newsprint, kraft, and book papers, as well as board, for a number of years to come. The factors influencing this situation are fundamental and unalterable, and include (1) a distinct shortage of technical, skilled, and unskilled labor; (2) an inadequate number of plants for the country's needs; (3) a distinct lack of raw materials and developed hydroelectric power; and (4) a reluctance on the part of capital to invest because of uncertain political and economic conditions and the increasing taxation of profits. In view of the increasing domestic demand for paper, these reasons will force France to continue obtaining raw materials from abroad.

A further cause for increased bleached sulphite imports is to be found in the rapid growth of the rayon industry. There is a marked tendency toward the reduction of the country's reliance upon cotton which is imported from practically one single source and to import pulp for the French rayon mills from several producing countries. There has been noted a distinct sentiment for Canadian pulp for this purpose, although during 1925, Sweden, Norway, and Finland supplied the great bulk of the pulp imported by France.

Brazil Market for Pulp Grows.—The British Trade Commissioner at Rio de Janeiro states that the Brazilian market for both mechanical and chemical pulp is growing materially because of the notable expansion in the paper industry in that country. The success of foreign exporters in this market depends entirely upon price at this time. The same statement applies to newsprint for consumption by the dailies, magazines, and similar publications in Brazil. The market for kraft, cheap writings, some tissues, and the cheaper grades of Bristol boards, strawboards, and corrugated board is highly protected and is supplied locally. The importation of high-grade writings, glazed paper, parchments, fine tissue, and a few others is primarily dependent upon delivered price. High duties practically prohibit the importation of printed, lithographed, or other highly worked paper, while the market for boxed papeteries is limited and is almost a Dutch and English monopoly.

Bureau of Standards Studies Fillers

Technologic Paper No. 301 of the Bureau of Standards entitled "A Comparative Study of Paper Fillers," which has just been released, contains the results of detailed tests of twenty-four commercial fillers of which eight representative samples were selected for actual paper-making purposes. These samples included asbestine mined in New York, talc from the same source, three clays from Vermont, South Carolina, and Georgia, respectively, crown filler, and two gypsums mined in Oklahoma and Ontario.

Careful comparisons were made as to grit content, fineness, brightness, and color. The paper-making equipment used was the semi-commercial machinery of the Bureau of Standards which operates under mill conditions. This included a 50-pound wood tub beater with manganese bronze bars and plate, a small Jordan with iron bars, a 4-plate screen, and a 29-inch Fourdrinier with a 33-foot wire, two presses, nine 15-inch dryers, a 7-roll machine stack, and a reel. A supercalender was also used for a portion of the work. The clay fillers were made into a slip and added to the beater when furnishing; the other fillers were added dry with the furnish.

Samples for filler-retention data were taken at the stuff box, head box, after the couch roll, and at the reel. The percentage of retention is considered as that proportion of the filler added to the beater furnish which appears in the finished paper, two formulæ for its determination being necessary because of the high solubility of the gypsum and crown filler. Sizing quality was not affected by any of the fillers used.

The conclusions drawn from the tests are as follows:

(1) Relative cost can not be taken as a criterion of the general paper making value of fillers. The cheapest clay was as good as the most expensive one and crown filler was no better than gypsum.

(2) Asbestine and talc have approximately the same paper-making properties and in this respect are comparable to the better clays. Crown filler and gypsum, being soluble in water, differ in amount of retention from the other fillers, all of which are practically insoluble.

(3) Crown filler and gypsum have relatively low retentive qualities when the usual machine water system is employed and the fillers are added in the usual amounts.

(4) The comparatively small amounts of filler in finished paper are not sufficient to produce variations attributable to the color characteristics of the fillers employed, unless pronounced differences in color are evident in the filling materials. Only fillers of good color were included in this investigation.

(5) The sizing process and other paper-making operations were not adversely affected by any of the materials.

(6) The differences in opacity, finish, strength, and degree of sizing were due chiefly to the difference in retention of the fillers.

Experimenting on Durability of Paper

The Bureau of Standards has also been conducting some research relative to the durability of paper for permanent records which should be of interest to all manufacturers of book, writings, ledgers, and bonds. The degree of permanence in paper is of vital importance but no definite information regarding it has hitherto been available. Public libraries, business concerns, the Federal Government, and State Governments have all requested advice respecting durability at various times.

From records of the aging of papers, it appears that wood-fiber papers, in general, have given poor service in respect to permanence. Rag-fiber papers, in general, alone have proved suitable for permanent records; but the fact that a paper is made entirely from rag fiber does not in itself insure permanence. The materials entering into the paper must be chosen with care, so that no materials will be present which in themselves will not be permanent or which will induce deterioration. It is quite well established that if fibers themselves are to be permanent they must be reduced to as pure a form of cellulose as possible, their purity being commonly measured by determining the copper number. As rosin sizing induces decomposition of paper fibers it should not be used. Judging from past records and from the results of accelerated aging tests, the sizing should consist of glue only, as when properly applied, such sizing is very permanent and has no injurious effect on the fiber. Starch sizing appears to be of doubtful permanence and chemical residues, especially those of an acid nature, are very harmful. Alum is an acid salt commonly used in paper sizing, and care must be taken that residues of this material in the paper are kept at a minimum. Other chemical residues, such as those derived from the cooking and bleaching operations, should also be reduced as much as possible. In employing coloring materials, only those of established permanency should be used, and only those which will not react chemically with other constituents of the paper. The need for more definite information is keenly realized and it is hoped that further research may be carried out.

Good shipping rolls—

—right off the end of your paper machine, can be produced with a Cameron Slitting and Roll-Winding Machine. The type recommended for efficient long-lived service is the CAMACHINE 18. It will keep ahead of your paper machine whatever its speed and will slit and wind good shipping rolls.

CAMACHINE 18 is a mill type roll-winder designed for every service in the paper or board mill, whether used as a winder behind the paper machine or as a rewinder in the finishing room.

THE PAPER MILL MODEL is built in widths from 92" to 162", and will wind rolls to a maximum diameter of 42".

THE BOARD MILL MODEL is built in widths from 92" to 142", and will wind rolls to a maximum diameter of 60".

The CAMACHINE Principle of Score-Cutting and Surface-Winding employing two drums and riding roller, is your assurance of steady, trouble-free service and of high speed production of good rolls.

Send for our catalogue of Mill Type Winders.

CAMERON
Machine Company

61 POPLAR STREET, BROOKLYN, NEW YORK.

Northern New York News

New Power Merger

A big power merger affecting the Carlisle interests has just been consummated. The merger involves $500,000,000 and is the biggest power combine in the East. The merger consists of a consolidation of the Power Corporation of New York, the New England Power Company, the Connecticut properties controlled by the United Gas Improvement, the Mohawk Hudson Power Corporation, the Northern New York Utilities, Inc., and a number of smaller power companies scattered throughout New England. The new company is known as the Northeastern Power Corporation, and ultimately it is expected that it will acquire an extensive interest in the Buffalo, Niagara and Eastern Power Corporation which was organized last year to consolidate various power companies in the western part of New York state controlled by the Schoellkopf interests. The International Paper Company is interested in the merger to the extent of holding $20,000,000 interest in the new company.

H. E. Machold has been elected president of the Northeastern Company and Floyd L. Carlisle is chairman of the board. H. I. Harriman, John N. Carlisle and C. E. Norris are vice-presidents, R. K. Ferguson, secretary, and F. A. Rogers, treasurer. Most of the directors are connected with the Carlisle organization. They follow: F. L. Carlisle; Charles S. Brewer, chairman of the board of the Mohawk & Hudson Power Corporation; Anson W. Burchard, vice-president of the General Electric Co.; J. N. Carlisle, president of the Power Corporation of New York; Wilbur L. Cummings of Sullivan & Cromwell; R. K. Ferguson of the F. L. Carlisle & Company; H. I. Harriman of the New England Power Company; H. S. Lewis, of the J. P. Lewis Company; H. E. Machold; Randall Morgan, chairman of the financial and executive committee of the United Gas Improvement Company; Charles E. Norris, vice-president of the Eastern States Power; J. F. Schoellkopf, president of Schoellkopf, Hutton & Pomeroy, Inc.; Paul A. Schoellkopf, president of the Buffalo, Niagara & Eastern; T. J. Walsh, E. H. Rollins & Son, Mark S. Wilder and W. K. Dick.

Frank L. Moore Leaves Estate to Family

The will of Frank L. Moore, former head of the Newton Falls Paper Company and later president of the Westfield River Paper Company, filed in Springfield, Mass., leaves the entire estate to his family. The estate is estimated to be in excess of one million dollars. The property is in a trust fund to be used by his widow during her life and at her death it is to be equally divided between the four children. The trustees of the will are given permission, if they see fit, to sell the common stock in the Westfield River Paper Company at a fair market value, but the will provides that the heirs shall be given a written option ninety days before such sale.

Work is being rushed on the repairs of the plant of the Carthage Sulphite Pulp and Paper Co., which is to be used for the manufacture of box board. Some of the old machinery is being replaced by new and general repairs are being made. It is expected that actual production will start about March 15. James Quinn, former superintendent of the Hinde & Dauche plant in Watertown, will be superintendent of the mill.

Foreign Pulp Direct to Albany

In anticipation of the rapid growth of the paper manufacturing industry in the Albany district, plans are being made by the Lagerloef Trading Company of New York to bring ships laden with foreign wood pulp direct to Albany.

According to officials of the company, which represents numerous paper concerns in the Northeast, efforts are under way to charter light draft steamers to ply between Finland and Albany in order that the wood pulp trade may be built up without waiting for the completion of the deeper Hudson project. Vice-President Orvay Hylin of the Lagerloef company intimated that 100,000 tons of wood pulp might be shipped. The company, he said, would not have to wait for preparation of storage space, as shipments would be transferred immediately for delivery to the mills upon arrival. A storage house of 30,000 tons capacity, however, will be erected in 1927. The A. P. W. Company imported 50,000 tons of wood pulp in steamers with a 12-foot draft.

An Enviable Record in Reforestation

According to the New York State Conservation Commission, Northern New York leads all other sections of the State in reforestation. During 1925, Lewis County set out 1,763,500 trees, leading all other counties in the state in this respect. Jefferson County set out 63,200 trees. Since 1910 there have been set out in Jefferson County 345,125 trees on land which was heretofore considered useless. Lewis County has planted 6,046,300 trees since 1909, when the Conservation Commission began the practice of supplying trees for planting on privately owned land. St. Lawrence County has planted 3,941,250 trees since 1909 and 259,600 were planted in 1925. Franklin County leads all other counties in the last 15 years, having planted 15,565,900 trees since 1909.

Forest fires in New York State set a new low record last year, the total number being 736, a decrease of 20 per cent from the year before. The total area burned over was 31,163 acres, or less than half the burned area in 1924.

New Process in Pulp

Fred H. Fuller, of Vancouver, B. C., formerly of Watertown, has been granted an invention on a process which may revolutionize the paper making industry. Mr. Fuller went west from Watertown about two years ago. He has served as superintendent of paper mills at Potsdam and Newton Falls, and with the National Paper Products Company at Carthage, the Kalamazoo Vegetable Parchment Company of Kalamazoo, Mich., the Columbia River Paper Company and a number of other mills in New England and in the West.

Mr. Fuller's patent provides a process of dehydrating wood pulp so that it can be shipped much more economically than at the present time. There is a great demand for pulp in the East, but the cost of shipping it is high because it contains 65 per cent moisture. Mr. Fuller claims that by his process, practically all the moisture can be removed and it can be packed so tightly that it is impervious to water. When the water is removed, the pulp will take up less space and 100 pounds of actual pulp can be shipped instead of 35 pounds of pulp and 65 pounds of water. He points out that much of the waste material now used for firing boilers can be used.

Sulphite Mill at Ogdensburg

Work has been started on the construction of a new sulphite mill at the plant of the Algonquin Paper Company at Ogdensburg. Work will be pushed rapidly in the spring.

At the annual meeting, Frank A. Augsbury was elected president and James Playfair and F. M. Ross of Canada were added to the directorate. They recently acquired the holdings of G. M. McKee in the company.

The company plans to add to its electrical plant in order to provide a greater amount of power for the mill.

New Power Plant for Union Bag and Paper

With a capacity for generating 10,000 more horsepower than the Sherman island plant of the International Paper Company, plans have been drawn for the construction of a proposed $6,000,000 hydro-electric power house by the Union Bag & Paper Corporation near Hudson Falls. The Sherman island plant, six miles north of Hudson Falls, has an installed horsepower of 40,000 and the Spier Falls plant of 45,000.

It is said that the construction of the power plant depends upon the outcome of the Hudson River Regulating District's suit to condemn land for the Sacandaga reservoir. It is reported that the Union Bag and Paper will not develop the power at Hudson Falls on the scale proposed unless a steady flow is assured through river regulation. The proposed Union Bag plant will be built on the Moreau side of the Hudson river, opposite Hudson Falls on the site of the present

22 Briner Economizer Units

Licensed under patents of E. A. Briner and J. E. Alexander

Being Installed This Month

Some are in connection with new machines and some in connection with old machines where the order was not placed till late in the fall.

These Economizers will all be in use before cold weather is over.

Now is the time for you to investigate so as to have yours in before cold weather sets in next fall.

Briner Economizers

Licensed under patents of E. A. Briner and J. E. Alexander

Save Steam

J. O. Ross Engineering Corporation

Main Office: 30 East 42nd Street, New York City

549 W. Washington Boulevard
Chicago, Ill.

1117 Tacoma Avenue
Tacoma, Wash.

79 Milk Street
Boston, Mass.

ROSS ENGINEERING OF CANADA, Limited
New Birks Building
Montreal

Union Bag power house, which is equipped with two 2,500 kilowatt generators. At Baker's Falls, the company has three 750 kilowatt generators and besides these two plants the company has two steam generators at Hudson Falls.

According to the plans, the new plant would require construction of a dam and a canal, allowing an 80 foot head. The plant, if constructed, will be a unit in the Adirondack Power & Light Corporation's system.

St. Regis Directors Re-elected

The following directors of the St. Regis Paper Company were re-elected at the annual meeting held in Watertown: Floyd L. Carlisle, Frank A. Empsall, Charles E. Norris, D. M. Anderson, Jonathan Bulkley, R. B. Maltby, J. A. Mollenhauer, H. E. Machold, W. K. Dick, J. J. Warren, Alva Miller, John N. Carlisle and D. C. Middleton. The directors will elect officers at a later date.

C. T. Jewell, general manager of the St. Regis Paper Company has been elected president of the North Counties Coal and Supply Corporation. Mr. Jewell's election will fill the vacancy caused by the death last summer of H. J. Cadwell of Carthage. Mr. Jewell also takes Mr. Cadwell's place on the board of directors.

There are various rumors, both in Watertown and in Wall Street that the St. Regis Paper Company is negotiating with the International Paper Company for the sale of the mills of the former company. It is said that the St. Regis would sell its mills to the International, taking in exchange the valuable water powers owned by the International below Watertown.

Herbert G. Aldrich

Herbert G. Aldrich, of Gouverneur, who organized the Aldrich Paper Company, which later became the Oswegatchie Paper Company, died at his home in Gouverneur January 24, after a long illness. Mr. Aldrich was born in Luzerne, Warren County. He studied for the bar and graduated from the Harvard law school in 1888. On account of the ill health of his father, he devoted his time to managing his father's properties. In 1898 he assisted in converting a large saw mill owned by his father into a paper mill, the company being the Aldrich Paper Company of which Mr. Aldrich was vice-president and director. The company later became known as the Oswegatchie Paper Company, owning a plant at Natural Dam.

The Gillette Fibre Mills have been located at Stillwater and a new 10-ton cylinder paper machine has been installed. The machine is designed for making fibers, cut linen and wood pulps. The officers of the company are: President, H. R. Gillette, of Boston; vice-president, Jackson Townsend, of Stillwater; treasurer, Benjamin A. Wood, of New York. The company was organized with a capitalization of $300,000. The plant will operate on a 24-hour basis.

The coal situation at Fort Edward is being relieved to some extent by the International Paper Company. L. G. Wilson, manager of the Fort Edward mill, has given to each employee of the company a load of pulp wood for fuel. It is estimated that about 300 families will be benefited. The wood pile in the yard and the large conveyor will be removed and a new building will be erected, to be used for the manufacture of the new fiber product of the mill, which has found demand far beyond the output of the single machine now operated.

Wage Scale Conference

The wage scale conference of the International Brotherhood of Paper Makers is scheduled to open at Montreal, March 9. All paper manufacturers in the United States and Canada are invited to attend. A meeting of the executive committee of the brotherhood will be held in Montreal a few days previous.

Many important matters are scheduled for consideration, including Sunday repair work, extension of running time and various other things. It is indicated that it is the intention of the union to seek to smooth out all matters at this conference and instead of presenting demands to be settled by negotiations, to conclude the negotiations without making any demands and insuring a continuance of work after May 1, the date of the expiration of the present contracts.

A. F. Richter, president and treasurer of the Stebbins Engineering Company, manufacturers of digester tanks, has gone to Europe to be absent three months on a business trip.

New York City News

Wood Pulp Man Heads New Bank

A new bank, the Central National Bank of the City of New York, has just been started in this city and at its head is a well-known member of the wood pulp and paper trade. D. Samuel Gottesman, president of M. Gottesman & Co., Inc., importers and merchants in wood pulp and paper, of 18 East Forty-first street, New York, is chairman of the board of the new bank, and was chairman of the organization committee which organized the new banking institution. Mr. Gottesman also is treasurer and director of the Broadway-Fortieth Street Corporation, the Central National Safe Deposit Company, and of the Gottesman Company Aktiebolag, of Stockholm, Sweden.

The new bank is located on the street floor of the new 25-story building at the northeast corner of Broadway and Fortieth street. Officers of the bank were gathered from among experienced officials of large New York financial institutions.

The International Paper Company, of New York; the Albemarle Paper Manufacturing Company, of Richmond, Va., and the Kalamazoo Vegetable Parchment Company, of Kalamazoo, Mich., were elected recently to membership in the Swedish Chamber of Commerce of the United States.

Obituary

August Klipstein, head of the industrial chemical house of A. Klipstein & Co., of 644 Greenwich street, New York, died January 8 at his home, 378 West End avenue, New York. He was 77 years old. His widow, Mrs. Hedwig Klipstein; a daughter, Miss Louise A. Klipstein, and two sons, August Jr., and Herbert C. Klipstein, survive him.

Henry F. Fulling, founder of the paper and twine jobbing house of Henry F. Fulling Company, Inc., of 230-234 West Seventeenth street, New York, died on December 23 of pernicious anaemia. Mr. Fulling was 52 years of age. He founded the company which bore his name in 1897, and the business was incorporated in January, 1920. Mr. Fulling at that time was adverse to continuing the business but decided to "give the boys a chance," and retired about a year and a half after the corporation was formed, his employes continuing the business. He is survived by a widow, a mother and a son.

Roderick Beebe, who died on December 21 in a New York hospital at the early age of 24 years, was fourth in direct line of a family engaged in the pulp and paper business. His great-grandfather, for whom he was named, was born in 1816, and a line of worthy sires extended back to John Beebe, who immigrated to this country from England in 1650. The young man was the son of Ira L. Beebe, Jr., and had for several years been associated with his father in the firm of Ira L. Beebe & Co., Inc. His grandfather, Ira L. Beebe, now retired, is known to many paper manufacturers through his long connection with the trade as a pulp importer.

Adolph Katzenstein, of Katzenstein & Keene, Inc., importers of paper mill supplies of 40 Rector street, New York, and a pioneer importer of rags for American paper manufacturers, died in the French Hospital in New York December 22 after a long illness. Mr. Katzenstein had been engaged in the rag importing business in New York since 1882, for many years operating under his own name of A. Katzenstein. He possessed the unique distinction of having made the first sale of rags to the American Writing Paper Company right after the formation of that company, and the order hangs framed in the offices of Katzenstein & Keene, Inc.

Increased Speed, Greater Radius and Lower Costs for the Woods Operator with the **SNOW-MOTOR**

Fordson Powered

THE Snow-Motor makes available to all engaged in forest operations the most dependable transportation *Over* snow ever devised.

¶ This machine will move heavy loads *Over* snow, where horses can travel only with great difficulty. With the Snow-Motor, and its snug passenger cab there need no longer be painful cutter drives, exposed to the bitter cold, to Depot Camps.

¶ The Snow-Motor provides transportation *Over* snow for all purposes, under all conditions. It weighs approximately 4,000 pounds, yet it virtually "floats" *Over* snow, because in its construction and engineering it has been devised specifically for that purpose. No other machine ever invented functions in the same way. *Over* snow of any depth, or over piled up drifts, it glides with ease, packing down the snow as it goes, and it is capable of negotiating steep mountain grades.

Will Effectively Help These Industries

Lumbering
Mining
Pulp and Paper
Forest Operations
Rural Mail Deliveries
Milk Deliveries
Rural Public Utilities
Emergency Use in Cities
Hauling Freight to Railroads
Interurban Bus Operation
Doctors, Undertakers
And many others

For full particulars in regard to the Snow-Motor see your nearest authorized Ford dealer or write to us

Snow-Motors Inc
DETROIT • MICHIGAN • U•S•A

A special cab with capacity for driver and four passengers, as well as 200 pounds of luggage, is now available. Entrance is at rear. Adaptable to all industries

Canadian Section

Montreal, Jan. 1, 1926.

Canada Leads the World in Newsprint Production

The figures recently published by the Newsprint Service Bureau show that in December for the seventh time last year the monthly production of the Canadian mills was greater than that of the United States mills. The difference, it is true, was only some 300 tons; but the American mills were operating at 94.4 per cent of capacity and the Canadian mills at only 90 per cent.

With the scheduled coming into operation in the course of this year of quite a number of new machines in Canada, this country will very shortly hold undisputedly the leadership which it at present shares with the United States. And it is a pretty safe prediction to make that it will hold this foremost position for a long time to come, as the men at the head of the industry are progressive and wide-awake to the necessity of providing a permanent and abundant supply of raw materials and of carrying on operations as economically and efficiently as possible.

QUEBEC

Development of Quebec Resources Benefiting the Province

The session of the Quebec legislature opened on the 7th of last month, and in the debate on the Speech from the Throne, Hon. Honoré Mercier, Minister of Lands and Forests, painted a glowing picture of the future of the forest industries in the Province, and gave figures which brought home very forcibly the remarkable results of the Government's policy of keeping the provincial resources to be manufactured right here instead of allowing them to be exported in their raw state for manufacture outside the province.

In 1919 the capital invested in the pulp and paper mills of the province was 124 millions, and by 1925 it had increased to 220 millions. The production of pulp had risen from 282,935 tons in 1910 to 1,170,314 in 1924, while the exports of pulpwood had fallen from 883,803 cords in 1908 to 636,000 cords in 1925.

Turning to water powers the minister pointed out that the province has 15,000,000 horsepower available, and the development has been great of late years, and now stands at 1,600,000 horsepower, which is 40 per cent of the total Canadian development. This compares with 330,000 horsepower in 1910, which was only 33 per cent of the total Canadian development. The increase in the Dominion during 1925 was 719,000 horsepower, of which 438,300 was in Quebec and 200,000 in Ontario. It is estimated that by 1930 Quebec will have over 50 per cent of the total Canadian hydro-electric development, notwithstanding the increase in other provinces.

Projects at present under construction or about to to be started include the 800,000 horsepower development at Chute à Caron by the Price Bros., Duke, and Aluminum Co. interests, harnessing of the Gatineau River at Chelsea and at Farmers by International Paper, work on the Manicouagan River by Ontario Paper, on the upper Ottawa River, and at Lakes Baskatong, Kabonga, Mackinac and Tremblant, several of which are in connection with projected pulp and paper mills.

Pulpwood Limits to Be Auctioned Shortly

On the 13th of this month the Quebec Government will offer by auction permits to cut timber in certain regions of the province on the Manouan, Aux Rats, Aschamouchouan and Mistassini Rivers, comprising some five thousand square miles. The conditions include a condition by which the timber cut in the areas affected must be manufactured in the Province of Quebec, and also provide that in no case shall the total of the cut exceed 80 per cent of the total possibility of the forests affected so as to provide for reserve for the future.

At least two new mills must be erected within three years by the successful bidders, one of 450 tons on the Quebec side of the Ottawa River and one of 200 tons in the Lake St. John region.

A fixed assessment of $300,000 for 20 years for the International Paper Co. was unanimously approved when the citizens of the municipality of West Templeton went to the polls last month. Not a dissenting vote was cast. The fixed assessment applies to general taxes, public school and separate school taxes.

A new record run was recently made by the newsprint mill of Belgo-Canadian Paper Co. at Shawinigan Falls, when the total production for one day was 424.25 tons as compared with a rated capacity of 390 tons. The high production is attributed to the efficiency of Nos. 5 and 6 machines which were installed a couple of years ago.

Howard-Bienvenue Lumber Co., Ltd., with head office at Charny, Lévis County, has been granted a provincial charter to conduct a lumber and pulpwood manufacturing business, with Charles B. Howard as president. Mr. Howard is a well-known lumberman of Sherbrooke, Que., and was recently returned in the federal elections as Liberal member for Sherbrooke.

Building Paper Firms Merged

A recently incorporated company known as Building Products, Ltd., has taken over the securities of the following important manufacturing units:

The paper mill of Ruberoid Felt Mfg. Co., Ltd., at Portneuf, Que., which has at present a daily capacity of over 15 tons of sheathing papers and pulp boards for the manufacture of wall boards.

The felt mill of Bird and Son, Ltd., at Pont Rouge, Que., the largest of its kind in Canada, with a capacity of over 30 tons of rag-felt per day.

The roofing factories and wallboard plant of the Ruberoid Co. at Highlands, near Montreal.

The roofing and asphalt shingle plant of Bird & Son, at Hamilton, Ont.

The Ruberoid Co. is therefore a division of the new organization, which has its head office at Ottawa, and the Ruberoid Co. will continue to function in exactly the same way as heretofore, manufacturing its own line of products and carrying out its same individual Ruberoid policies.

The Quebec Streams Commission has decided to start early this spring construction of a dam on the Gatineau River, near Chelsea, and to render more effective the Gouin Dam by storing the waters of the St. Maurice on the Mackinac, one of its tributaries.

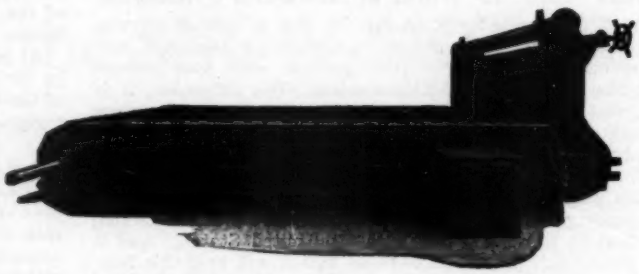
Production at Kipawa to Be Trebled

The present capacity of the high grade bleached sulphite mill of Canadian International Paper at Kapawa is about 50,000 tons a year. Extensions are at present under way to raise this to 75,000 tons, and the new units are expected to be ready for starting up about the middle of this month. Over 30,000 tons are at present consumed by the artificial textile fiber industry, both on this continent and in Europe. It is being used not only for the manufacture of rayon (artificial silk), but also for artificial wool, which is now being pro-

COXE STOKER

Gives perfect control over entire grate

Multiple air compartments in the Coxe Stoker make it possible to vary air pressure under different portions of the grate in accordance with the thickness of fuel bed above each compartment, hence maintaining uniform fire over entire grate. If necessary only ½ or ¾ of grate may be used for combustion, the rear end compartment being closed to draft.



"Burns Anything That's Black"

Send for Bulletin C. B. 2

COMBUSTION ENGINEERING CORPORATION
POWER PLANT LIMITED EQUIPMENT

STOKERS OF ALL TYPES · PULVERIZED FUEL SYSTEMS · STEAM TURBO-GENERATORS · HIGH SPEED STEAM ENGINES
AIR PREHEATERS · RADIAL BRICK CHIMNEYS · COAL HANDLING EQUIPMENT · ASH CONVEYORS AND HOPPERS
SUSPENDED FLAT ARCHES · DE-AERATORS · CONDENSERS OF ALL TYPES · OIL BURNING EQUIPMENT
PULVERIZING AND GRINDING MILLS · RECORDING INSTRUMENTS · INDUCED AND FORCED DRAFT FANS · DIESEL OIL ENGINES

HEAD OFFICE—TORONTO VANCOUVER, MONTREAL, WINNIPEG

MOORE

MOORE PUMPS

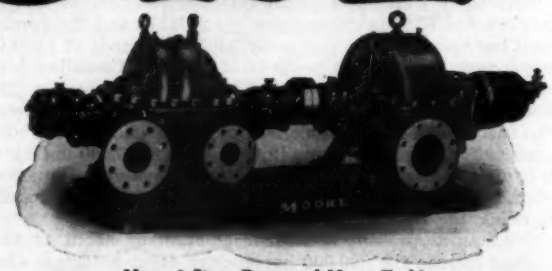
- Rubber or bronze sealing rings — *interchangeable.*
- Perfect hydraulic balance.
- Horizontally split casings.
- Bronze covered alloy steel shafts.
- Extra rugged construction.
- Highest *permanent* efficiencies.

SIMPLE DESIGN
HONEST
CONSTRUCTION

"Best at every turn"

CENTRIFUGAL PUMPS

"Built in a Steam Turbine Shop—"



Moore 3 Stage Pump and Moore Turbine

After a user has operated his first MOORE PUMP he usually "repeats"—he is thoroughly pleased—MOORE PUMPS are built single or multistage for motor, turbine or belt drive—

Your careful investigation will repay you.

—Bulletin on request—

MOORE STEAM TURBINE CORPORATION
Wellsville, New York
Offices in all principal cities
In Canada
Ontario and East, General Supply Co. of Canada, Ltd., Ottawa
Manitoba and West, Darling Bros., Ltd., Montreal

duced commercially in Italy, and indications are that it may eventually be the basis of an artificial linen and artificial cotton industry.

The demand for this grade of pulp is increasing so rapidly that the company have decided to go right ahead with their expansion, so that the capacity will be increased to 150,000 tons a year.

Stop Sunday Work in Quebec Pulp and Paper Mills

Mills and factories will no longer operate on Sunday in this province, or action will be taken by the attorney-general, according to instructions issued recently by Premier Taschereau to Mr. Louis Guyon, deputy minister of labor, to advise the owners or managers or firms affected that Sunday must be observed. It is understood that the instructions issued by the attorney-general provide for a serious watch being made on Sunday activities, and inspectors will later be given the authority to take the necessary action.

Sunday work has already been discontinued for some little time in the Jonquières and Kenogami mills of Price Bros., and it was stopped on January 1 in the mill of Belgo-Canadian Paper at Shawinigan Falls.

It is reported that the Mead Investment Company, of Dayton, Ohio, which has obtained control of the St. Anne Power and Paper Company, near Quebec, is taking possession of the property today.

In order to stimulate interest in the work of accident prevention, the "Pulp and Paper Magazine of Canada" is offering a trophy for the safest mill in Canada. The mills will be divided into two groups, Group A including all mills having payroll hours of 60,000 per month or over, and Group B including all other mills. A challenge shield will be put up for competition for mills in each group in the whole of Canada. The contest will last from March 1 to September 1, 1926.

General J. B. White has been elected vice-president and director of Canadian International Paper. He has been identified with the Riordon Pulp Corporation and is vice-president of the Gatineau Co., Ltd.

St. Lawrence Paper Mills, Ltd., have been granted a fixed valuation by the city of Three Rivers for the purpose of estimating the school tax of $2,000,000. In view of assessments previously made on other Three Rivers property, the company felt that this assessment should be $1,000,000, but the city council maintained that to establish a precedent at such a rate would soon leave the city with insufficient revenue for the ever increasing demand for school accommodation.

In connection with the appointment of Dr. Harold Hibbert to the new chair of Industrial and Cellulose Chemistry at McGill University, the Canadian Pulp and Paper Association have a project on foot to erect on university property, a building which will provide suitable accommodation and equipment for the department, and at the same time furnish research laboratories for the association, and have promised to pay $7,500 a year for its maintenance.

The newsprint machine installed by the E. B. Eddy Co., at Hull, last May, has been speeded up steadily since it was started up, and is now averaging over 100 tons per twenty-four hours. A high mark of 107.5 tons has been reached.

Canadian International Paper will shortly commence the development of a second large water power on the Gatineau River with the erection of a hydroelectric plant at Farmers, Que. In conjunction with the development further down the river at Chelsea, work on which was started a couple of months ago, there will be developed a total of some 150,000 horsepower.

American Cellulose and Chemical Company will locate at Drummondville shortly. Arrangements are well under way to commence the building of a plant at an early date. Probably the Canadian company will be known as the Canadian Cellulose and Chemical Company. Its output will consist of rayon or artificial silk, which will be made from a cotton base. The parent United States concern is one of the largest operators in this business in America, and is also part of an organization which operates in England and on the continent. It is estimated that $7,000,000 will be used for buildings and plant equipment, and a further $2,000,000 will provide working capital and early operating expenses.

Port Alfred Pulp and Paper Corporation are to proceed with the installation of a fifth sulphite digester, a new machine shop of the latest design, and a steel tank for storing groundwood in slush form.

ONTARIO

Progress at Abitibi Mill During 1925

The year 1925 was an eventful one for the mill of Abitibi Power and Paper Co. at Iroquois Falls. Not that there was anything spectacular in the year's work, but there were results which were well brought out by the following figures:

The groundwood mill increased the production per stone by 14½ per cent; the sulphite mill produced 1,500 tons more; the paper mill added 12½ tons per day to its output throughout the whole year; the steam plant rose from 74.6 per cent efficiency to 79.6 per cent. In the groundwood mill an average saving of 5 tons of tailings per day was effected, but during the last two months the saving was two tons higher than at the beginning of the year. There was also a reduction in the sulphite tailings, and the increased production in this department was obtained without any increase in the number of digesters.

The great progress made during the year was the result of steady plugging and solving as they came along any problems which presented themselves. The success of the year's work was directly due to the get-together and stick-together spirit which pervaded the mill; the credit for the achievement goes to the united efforts of all and not to superhuman effort or intelligence of anyone.

Damage at Booth Paper Mill

The breaking of a high velocity flywheel on one of the paper machines in the Booth paper mill at Ottawa, last month, caused considerable damage. One machine had to be shut down for a couple of weeks and another one was out of commission for a few hours. Fortunately, nobody was hurt.

The wheel, which was about ten feet in diameter, broke without warning. One piece of steel, weighing several pounds, crashed through the ten-inch cement ceiling of the basement and damaged one of the machines.

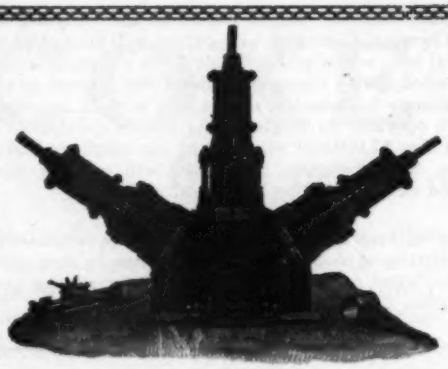
Paper Machines to Be Built at Port Arthur

According to Arthur B. Conmee, managing director of the Port Arthur Shipbuilding Co., arrangements and plans are now being made to place the big shipbuilding plant at Port Arthur on a basis for the ultimate manufacture of pulp and paper machinery on a large scale. It is understood that the company secured the rights to produce what is said to be one of the leading paper making machines on the continent.

Mr. Conmee remarked, "I have every reason to believe that if the Thunder Bay Paper Company go ahead with their plans, our plant will be employing within a very short time about four hundred men in addition to our regular marine staff."

By a majority of 800 the voters of Port Arthur recently approved a by-law to grant a fixed assessment of $500,000 to the Thunder Bay Paper Company.

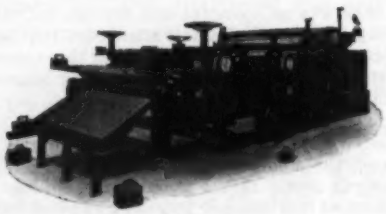
Considerable damage by water was done when a fire, caused by spontaneous combustion, broke out on the fourth floor of the five-story building of Wellington Street west, Toronto,



Standard Wood Pulp Grinder

Built in Three Sizes

Taking wood 24″, 30″ or 32″.
Bridge-trees—Are well proportioned.
Flanges—Made of steel, 40″ diameter.
Hydraulic Cylinders—Copper lined, 12″, 14″ or 16″ diameter.
Pillow Blocks—22″ length of bearing.
Pockets—Very heavy and designed particularly for free discharge of pulp.
Service—Continuous distinctive service is always assured.



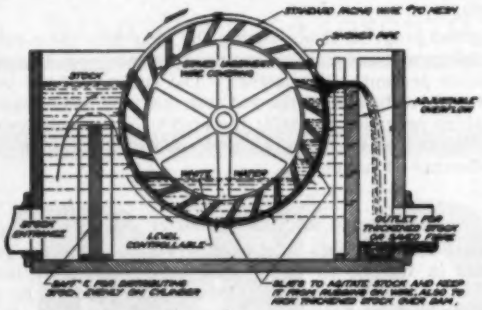
Rogers and Special Wet Machines

IMPROVED AND SIMPLIFIED
SINGLE AND DOUBLE PRESS
FOR CONVERTING CHEMICAL PULP INTO SHEETS 48% DRY

25-35 TONS air-dry pulp per 24 hours. Built in 72″ width, with patented pulp weakening and separating device or our new automatic knife cut-off attachment. A real labor saver.

FREIGHT CHARGES are greatly reduced. Savings on this item alone often pay for the machine in one year.

All infringements will be vigorously prosecuted



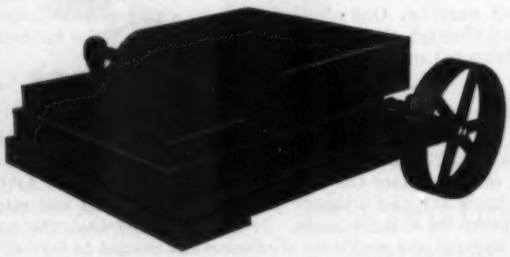
A. D. Wood Machine

Used as Pulp Thickeners, Savealls, Pulp Washers and Water Filters

ADVANTAGES:

Reduced Wire Costs	No Couch Roll
Enormous Capacity	Minimum Repairs
Only 2 H. P. Required	No Doctor
Works Automatically	Requires No Attention

OVER 200 MACHINES SOLD AND IN USE



Wells Undulating Knot and Sliver Screen

Separates knots and slivers from all kinds of pulp efficiently, continuously, automatically with negligible cost for operation and upkeep. Simple but rigid construction. Only best materials used. Operation in plain view. Broken plates quickly found mean fewer holes in fine screens and better stock. No rotor to plug and be strained should belt run off.

40 Tons Per Day. Write for Blueprint

PULP AND PAPER MILL MACHINERY
GLENS FALLS MACHINE WORKS

GLENS FALLS, NEW YORK

OUR LINE IS MANUFACTURED IN CANADA BY

THE NORTHERN FOUNDRY & MACHINE CO., LTD., SAULT STE. MARIE, ONT.

See pages 346 to 347 in the 1925 Paper and Pulp Mill Catalogue

occupied by Kilgour Bros., paper bag manufacturers and box makers. The blaze, which started in some paper, set off the sprinkler, and the damage to stock was quite heavy.

The Fielder Paper Box Co., 170 Berkeley Street, Toronto, intend erecting an addition to their factory early this spring.

500-Ton Mill at Smoky Falls

The Spruce Falls Pulp and Paper Company has announced officially that they will proceed with the erection at Smoky Falls, in New Ontario, of a 500-ton newsprint mill. They have already let contracts to Beatty and Morrow, of Kapuskasing and Toronto, for the construction of a railway from Kapuskasing to Smoky Falls, a distance of about 60 miles. No Dominion or Provincial charter will be taken out for the railway, which will be operated as a private line running through the limits which the company owns.

Promoters of the mill, it is announced, are making preparations for a capital outlay of from twelve to fifteen million dollars for the development of the district. The project follows the acceptance by the Ontario Government of the company's tender for timber rights on some three thousand square miles in the Mattagami and Ground Hog River watersheds. The Spruce Falls Company is owned by the Kimberley-Clark Company, of Neenah, Wis.

W. P. Bennett, president of the Rudd Paper Box Co., Toronto, and former president of the Canadian Paper Box Manufacturers' Association, and E. V. Donaldson, secretary-treasurer of the Rudd Paper Box Co., have formed a separate and distinct company known as Canada Cartons, Ltd., for the purpose of manufacturing cartons for food products. The cartons will be made from a laminated board manufactured by a new process which is claimed to be superior in resistance to moisture, grease, dust, etc., and at the same time light and strong.

The annual "President's Dinner," which was held at Sault Ste. Marie on January 16, was a decided success. The event, which is always looked forward to with much interest in Spanish River Pulp and Paper circles, took place in the G. W. V. A. Hall, with Geo. H. Mead, of Dayton, Ohio, president of Spanish River, presiding. He had as guest of honor E. W. Beatty, of Montreal, president of the Canadian Pacific Railway.

The pulp and paper industry in the Niagara Peninsula were gratified at the return by acclamation to the mayoralty of Thorold of L. B. McLeary, the well-known lumberman who has been leading the fight for the preservation of the lake and canal levels in the interests of lumber, paper and pulp industries between Lake Ontario and Lake Erie.

A Federal charter has been granted to Provincial Paper Sales, Limited, with a capital stock of $1,000,000 and headquarters in Toronto. The company, which is a subsidiary of Provincial Paper Mills, is empowered to buy, sell and deal in all kinds of pulp, paper, cardboard, paper materials, etc.

Collett and Sproule, paper box manufacturers, Toronto, have put in a couple of additional automatic glueing machines.

The F. W. Fisher Paperbox Co., Ltd., Toronto, have taken over the other half of the building they now occupy and will practically double their capacity.

Mr. Stephenson, who for some years has been with the Rudd Paper Box Co., Ltd., of Toronto, has joined the sales staff of the Dominion Paper Box Co., in that city.

Although no definite announcement has as yet been made concerning the deal, it is pretty generally known that a syndicate is negotiating for the purchase of Miller Bros.' plant at Glen Miller, Ont., which manufactures straw board, wood pulp board and egg-case fillers. It is reported that an option has been given on the plant and if it is taken up the intention is to greatly expand it and go into the manufacture of electric board.

Damage to the extent of about $5,000 was done to the stock of the National Paper Goods Co. when fire broke out at 226 Bay Street, Toronto. The aggregate loss to various firms is placed at $45,000.

The Ontario Government has granted the Hydroelectric Power Commission of Ontario authority to proceed with the development of the Adexander Falls on the Nipigon River. The development will require the outlay of approximately $7,000,000.

Installation of a Trimbey and Allan continuous mixing and proportioning system was recently completed at the big Abitibi mill at Iroquois Falls. A suction couch roll was installed on No. 7 machine, the work being done in remarkably short time: sixty-two hours after the mechanical crews started working paper was going on to the reel.

BRITISH COLUMBIA

International Harvester Takes Over Beaver Cove Properties

With the recent payment of $425,000 to creditors of the Beaver Cove Lumber and Pulp Company, another step has been taken towards recapitalization of what promises to be one of the largest pulp and paper enterprises in British Columbia, with International Harvester Company as the principal investors.

From seven to eight millions are already invested in the Beaver Cove plant and in the White Bros. properties. All carrying charges have been met regularly since the mills were shut down five years ago; and the creditors, which are mostly local firms, have been paid 7 per cent interest annually in the interval.

International Harvester are putting up at the present time a sum of about two millions to pay off all the obligations of the two companies. It is contemplated that if conditions are found to be satisfactory after the survey an additional amount of from $15,000,000 to $16,000,000 will be expended in the erection of a modern pulp and paper mill, saw mills and shingle mills, it has been stated officially.

The British Columbia Pulp and Paper Company, Limited, purchasers of the defunct Whalen Pulp and Paper Company, Limited, came into legal status as a corporation on January 22nd by the order of Mr. Justice Morrison, of the Supreme Court. Edward M. Miller, receiver, and the Montreal Trust Company, trustee in bankruptcy for the old firm, were discharged and the new firm has agreed to assume all liabilities incurred in winding up the defunct company.

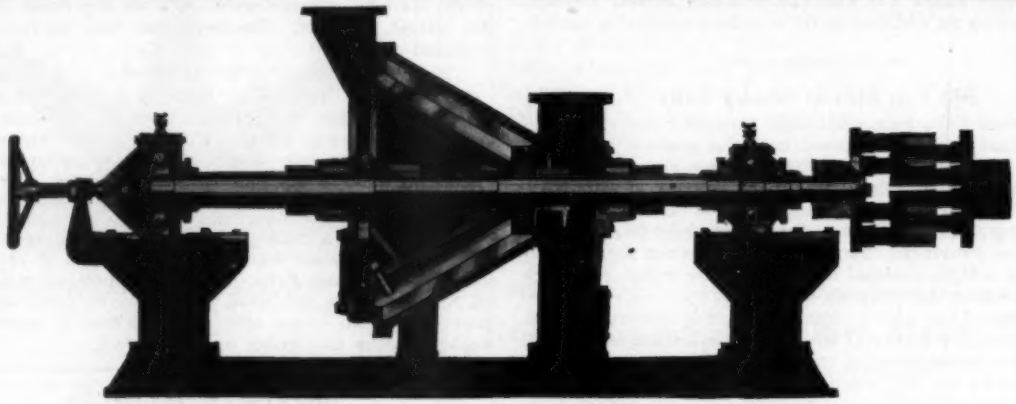
The new Australian trade treaty is giving an impetus to the pulp and paper industry in British Columbia. The Canadian-Scottish Paper Company is proposing to erect a plant there to manufacture coated book and lithograph paper. A market for the output will be found domestically and also in the Orient and in the Antipodes. The base paper for coating is already being manufactured in that province, and it is thought that the temperature of the Pacific coast will prove particularly suitable for the manufacture of coated papers.

MANITOBA

Contract Let for Fort Alexander Townsite

It was recently announced in Winnipeg that a contract, running well over one million dollars, for the construction of all buildings at Fort Alexander, in connection with the pulp and paper development there by the Manitoba Pulp and

IT'S NEVER TOO LATE TO CLAFLINIZE



Showing Cross-sectional View of Claflin No. 2

Claflins are built in three sizes

Complete description on page 350 Paper & Pulp Mill Catalogue

Write for Catalogue

HERMANN MANUFACTURING CO., Lancaster, Ohio

WATEROUS ENGINE WORKS CO., Ltd., Brantford, Can., Licensed Mfrs.

IT'S NEVER TOO EARLY TO CLAFLINIZE

The survival of the fittest

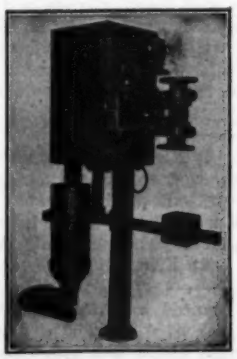
The easiest way to survive competition is to reduce the cost of production.

Our equipment will help you to do this:

Jenssen Acid Towers
Jenssen Spray Coolers
Bullard Gas Washer
Decker Cooking Process
Kamyr Feltless Wet Machine

G. D. Jenssen Co.

200 Fifth Ave., New York City



Don't
WORRY
Over Weights!

WRITE
to
TRIMBEY

Use the TRIMBEY AUTOMATIC CONSISTENCY REGULATOR

More than 400 in use.

"Made in Canada?" "Yes!"

Agencies in Principal European Countries.

TRIMBEY MACHINE WORKS

Glens Falls, N. Y.

Paper Company, had been let to a local concern, Cater-Halls Aldinger Co. In making the announcement, M. M. Turner, resident engineer for the company, stated that because paper had to be put on the market by December 1, 1926, it had been impossible to call for tenders in the regular manner. He added that arrangements for the construction of a power line to the mill site had been completed and the Canadian National Railway spur to the plant was completed and that delivery of material had already started at the beginning of January. Contracts for the machinery have yet to be let.

The company, he stated, will be responsible for the building of a complete town, where the workers at the mill will live. It will be laid out by competent town-planning experts, who are now on the ground, and will have churches, schools, athletic fields, stores and homes.

Contracts representing nearly $400,000 were recently let for steel construction work at the mill of the Manitoba Pulp and Paper Company. The award was made to the Dominion Bridge Company, of Montreal, and work will be commenced on March 1st.

NEW BRUNSWICK

New Paper Mill May Be Built on the St. Croix River

Although no formal announcement has been made by the new owners of the Panuke Pulp and Power Co.'s properties on the St. Croix River and Panuke Lakes, it is reported that a start will be made during 1926 in the construction of a paper mill along the St. Croix. The power possibilities on the St. Croix are said to be valuable, and these will be developed to the fullest by the new owners of the company.

W. H. Chase, head of the syndicate that made the purchase, has been identified with apple growing in Nova Scotia for many years. His home is in Wolfville, N. S. The Panuke properties has successively passed in the hands of Frank Ellershausen, the late T. G. McMullin, of St. Croix Lumber Company, and a syndicate organized by T. D. Pickard, who transferred them to the present owners.

There are said to be a number of excellent sites for a paper mill in the midst of the wood, and with cheap power available when fully developed.

Joseph Duguay, millwright at the pulp mill of the Bathurst Co., Ltd., at Bathurst, lost his left arm at the shoulder, recently, while oiling machinery. The arm became entangled and was crushed severely before being extricated. Amputation was necessary. Mr. Duguay had been employed at the pulp mill for about ten years.

NOVA SCOTIA

The MacLeod Pulp and Paper Co. is operating both its pulp mills on the Mersey River to capacity. Conditions have been very favorable at these mills for some time. Practically all the pulp being produced at these mills is shipped to New York from Liverpool, two steamers being in the service between the two ports.

The property of the Bear River Pulp Company, located at Bear River, will again be sold at public auction on the 10th day of February by J. H. Edwards, high sheriff for the County of Annapolis. The plant was in operation for about ten weeks last spring, and a large number of men from all parts of the county were given employment. The closing of the plant was a great blow to Digby and Annapolis counties, but the owners had hope of starting operations at an early date.

V. D. Simons, industrial engineer, specializing in pulp and paper mills, hydroelectric and steam power plants, and electrification of paper mills properties, has moved his office to 435 North Michigan avenue, Room 2021 of the Tribune Tower.

Congressman Treadway Will Address Salesmen

Congressman Allen T. Treadway, who has probably had more to do with the formulation of the paper provisions of the Tariff Act than any other member of the lower house of Congress, will be the head line speaker at the annual banquet of the Salesmen's Association of the Paper Industry at the Waldorf-Astoria Tuesday evening, February 23.

The Salesmen's Association is jubilent over its success in securing Mr. Treadway, particularly because of his direct interest in legislation affecting the paper industry.

Congressman Treadway is one of the ranking members of the Ways and Means Committee of the House of Representatives, which initiates all tariff legislation, and his part in the formulation of the Tariff Act of 1922 was no small one. Coming as he does from Stockbridge, Mass., in the heart of the paper making district of the Berkshires, he has more than an academic knowledge of the problems of the paper industry.

In accepting the invitation to speak at the convention banquet, Mr. Treadway said that he would talk to paper men about the problems which most deeply interest them.

Because of the press of business before Congress, Congressman Treadway was reluctant to leave Washington, but when an appeal was made to him to speak before the industry of which he knows so much, he finally accepted the invitation, which was presented personally by President Walter E. Perry of the Salesmen's Association, who went to Washington with a small committee of associates in the association, men who like Mr. Perry know Congressman Treadway personally.

Detailed plans for the annual convention of the Salesmen's Association are already well under way. J. H. Tregoe, of the National Credit Men's Association, who has been one of the most popular speakers on business subjects before national trade organizations will be the speaker at the forenoon session of the convention, and the balance of the program will be devoted to the business of the organization.

The evening program will be devoted almost entirely to the address by Congressman Treadway, but there will be a few remarks by men well known to the industry, prefatory to the treat of the evening.

While the New York Division of the Salesmen's Association has direct charge of the plans for the annual convention, the New. Yorkers have not been neglecting their own regional activities, and there has been a notable spurt in interest in the last few weeks. The New York program of having a series of instructive talks on paper problems in addition to its round table business discussion at the weekly luncheon meetings, has met with the enthusiastic approval of the members in and about New York.

The first two meetings went to the basic raw material problems of the industry, Julian Rothery speaking Jan. 11 on forestry and the raw material situation as it affects the entire industry. He was followed Jan. 18 by Mr. Douglas Crocker on the harvesting and purchase of the pulp wood crop, while the next on the program was W. G. MacNaughton of the Technical Association on the place of the technical man in the industry and his opportunities.

A. J. T. Taylor and John Anderson to Reside in England

Mr. A. J. T. Taylor and John Anderson, president and secretary of the Combustion Engineering Corporation of Canada, Ltd., Toronto, and the Ruths Accumulator Company, Inc., Johns Manville Building, 41st St. and Madison Ave., New York City, will leave the continent on February 13th to permanently reside in England for a few years with their families. They will be associated with the Underfeed Stoker Co., Aldwych House, Aldwych, London, W. C. 2, England.

Both Mr. Taylor and Mr. Anderson will retain all of their connections here and visit America from time to time. They have taken over all of the connections, patents, etc., of the Underfeed Stoker Co. and the Ruths steam accumulator in the English speaking world.

Eaton, Crane & Pike, paper manufacturers, have leased space on the tenth floor of the Park Avenue Building for its New York executive office. The lease is for a term of 12 years.

LINDSAY FOURDRINIER WIRES

Give Service That Satisfies

Fourdrinier and Cylinder Wires

Made in Brass and Phosphor Bronze in All Sizes

THE LINDSAY WIRE WEAVING CO.

Collinwood Station Cleveland, Ohio

"You can say good-bye to rust when you paint with BITUMASTIC"

The Paint Question

Your search for a paint that will stand up under moisture, chemical fumes and heat conditions comes to an end when you begin using BITUMASTIC SOLUTION. It gives enduring protection to metal buildings and roofs, structural steel, tanks, pipes, stacks, boiler fronts and breechings and other steel surfaces. It has a fine glossy finish that lasts. The sooner you start using BITUMASTIC, the sooner your worry over the paint question ceases.

The most convincing argument in favor of the use of BITUMASTIC SOLUTION is the performance of the paint itself. We are willing, therefore, to send a sample can, without charge, to interested executives and engineers.

SINCE BITUMASTIC 1854

WAILES DOVE-HERMISTON CORPORATION

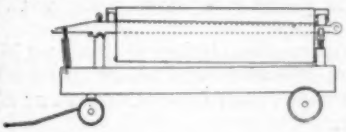
17 BATTERY PLACE, NEW YORK

322 S. Delaware Ave., Philadelphia Union Trust Building, Cleveland

Practical Helps for the Mill Man

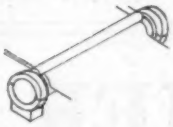
To Handle Fourdrinier Wires

HANDLING the wide Fourdrinier wires has been facilitated in some mills by the use of a special truck. The illustration shown gives the truck used with the forging for a suction couch roll. The turn-buckle at the nose of the forging serves to keep the forging horizontal when the support at the other end is removed. With the back support removed, the wire may be threaded on the forging. The support is then replaced and the wire may be stored in a specially designated spot in the mill. It is of course covered with a wooden hood to prevent damage. When the time comes to change the wire it is only necessary to wheel the truck into the machine room, turn it crosswise of the machine aisle and pick up the forging, wire and all, with the crane and place the nose of the forging in the socket made for it in the suction roll. Continued use of this truck with the wires will show numerous ways in which it may be made a time and labor saver. The application of the truck is the same where the machine has a two roll couch press and a pipe is used in threading the wire onto the bottom couch roll.



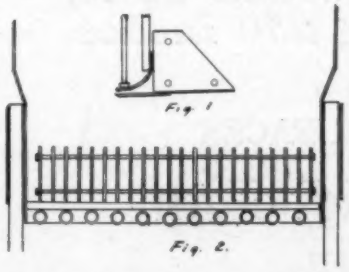
Substitute for the Dandy

USERS of the suction couch roll are finding that the dandy may be dispensed with by substituting a rubber roll to run on the suction roll. The rubber in the roll is somewhat softer than a rubber press roll. The roll is placed just above the suction box. It is found that this lays the sheet quite satisfactorily and has other advantages.



Breaking Up the Currents in the Head Box

ONE of the greatest problems in operating the modern high speed machines with the high slices is the control of the currents in the head box. Such large quantities of water must pass through the head box and out under the slice that the equalization of the currents is very difficult. Practical tests have demonstrated that one of the most effective means of accomplishing this end is with a rack of metal plates set against the slice in the head box. The illustration is diagrammatic and not to scale. Installations in operation have the plates of acid resisting metal about ⅛ inch thick, and set from one-half to one inch apart the entire width of the machine. Figure 2 shows the shape of the plates. The essential thing is that they be set squarely up against the slice so that no part of the stock may get to the wire without being directed by two of the parallel plates. In actual installations, the base line of the plate shown in Figure 1 is about fifteen to eighteen inches and the height of the rack is a little less—about twelve to fifteen inches.

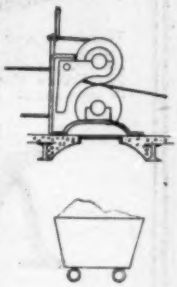


To Get a Thicker Stock Film on Save-Alls

ADDITIONAL efficiency may be secured from save-alls by any means which will give each save-all in use a thicker film of stock going over the cylinder. Where the stock film is thicker, a mat is formed on the cylinder wire which retains a greater proportion of fluff and short fibers. One means of assuring a thick film on save-alls where several are run in a battery is to shut part of the battery down at times of the day when there is a reduced amount of white water. As this is difficult to determine without keeping a man on the job all the time, one mill has arranged a float valve which controls the motors starting and stopping the save-alls. When there is a considerable amount of return water, all the save-alls are in operation. When the level in the return water tank drops, some of the save-alls are shut down and the work is done by those remaining. The save-alls in operation thus get a thicker mat on the cylinder wire.

Handling Broke in the Basement

WHERE the size and amount of unoccupied space in the basement makes it at all possible, labor and trouble may be saved by handling all machine broke down through the floor. Many mills have holes in the machine room floors beside the presses, through which the wet broke is thrown into a cart standing under the hole. Holes are also made at the dry end of the dryers and under the calenders so that the dry broke may go down, too, and the shaving is blown down directly into the beater. One man on a shift can handle the broke from machines turning out over one hundred sixty tons in twenty-four hours. This is done in conjunction with a breaker beater where the operator has no beater to dump in.



Cleaner for Suction Rolls

SOME users of suction rolls have found that the perforations in the shell had a tendency to fill up with either stock or felt nap. In fact, it was found that after a roll had been operated for some time that the holes in a suction press roll were plugged quite tight with a mixture of stock and nap and some difficulty was experienced in cleaning the roll. To eliminate this condition, which, it will be readily seen, greatly reduced the efficiency of the roll, a cleaning device was installed. Two venturi nozzles were connected with a piece of pipe. The nozzles were spaced a little less than half the width of the machine apart, and the whole was carried in a larger pipe running the width of the machine. A steam line was connected to the pipe supplying the venturi nozzles. The practice was to give the suction roll a good cleaning once on each shift—three times a day. This was done while the machine was running and interfered in no way with the operation of the machine. The machine tender ran the nozzles across the face of the roll slowly for about a half hour. In making the installation, care was taken to have the steam jet from the venturi nozzles pointing directly into the perforations in the suction roll shell.

Hot Water Shower on Jacket

PUTTING on a jacket may be expedited by the use of a hot water shower on the jacket when it is time to shrink it. This shower may also be used to clean the roll before the jacket is put on. The same pipe may be used that is used for the regular shower on the jacket, the hot water connection being made to the other end from the cold water. When the machine is operating it is best to break the union on the hot water supply to prevent the hot water coming through a leaking valve when it is not wanted.

Increasing Life of Dryer Felts

ONE mill gets double life out of dryer felts by riveting the seams instead of sewing them, which give way so easily and cannot be renewed.

No need to break connections to inspect this Hytor

This is the new No. 8 Nash Hytor Vacuum Pump for couch roll service. Recommended for vacuums from 6 to 20 inches. Supplied in sizes suitable for handling up to 2000 cu. ft. of air.

When the heads of the new No. 8 Nash Hytor, which are bolted to the central ring support on either side, are removed, the interior of the pump is open for inspection. Note that the unit can be disassembled without disturbing or breaking the piping connections. The central ring support assures stability of the unit, and helps to keep the shaft in perfect alignment.

The single pump inlet does away with adjustable manifolds.

For a complete description of this new Nash Hytor, its method of operation and many outstanding advantages for suction couch service, write our Engineering Department.

NASH ENGINEERING COMPANY

So. Norwalk **Connecticut**

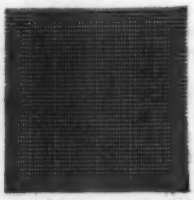
New England Representative
Mr. G. H. Gleason, Nottingham Bldg., Copley Sq., Boston, Mass.

Western Representative
Mr. T. H. Savery, Jr., Room 1524 Republic Bldg., Chicago, Ill.

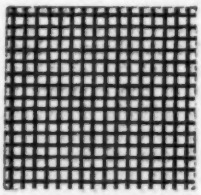
Nash Hytor

VACUUM PUMPS AND COMPRESSORS

FOURDRINIER WIRES



In Brass, Bronze and phosphor bronze, widths up to, and including 250 inches.



Also

CYLINDER FACES
WASHER WIRES
and CORDUROY CLOTH

THE W. S. TYLER COMPANY

Cleveland, Ohio, U. S. A.

Pacific Coast News

Crown-Willamette Passes into Public Ownership

The properties of the Crown-Willamette Paper Company on the Pacific coast, recently transferred from private to public ownership in a transaction involving approximately $55,000,000, consist, in part, of timber land and mills in Oregon. Other properties and holdings are located in California, Washington, Nevada and British Columbia. The deal was under the direction of a banking group headed by Blyth, Witter and Company and Blair and Company of New York and associated with them in the offering of the preferred stock were the Continental & Commercial Trust & Savings Bank of Chicago and the Anglo-London-Paris Company of San Francisco.

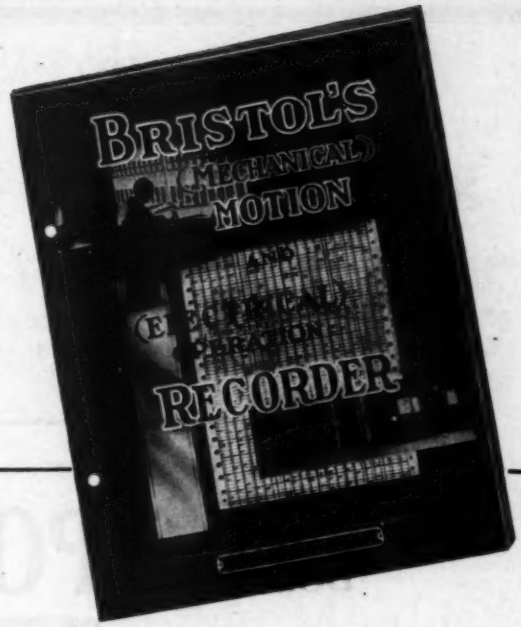
The new Crown-Willamette Paper Company was formed under the laws of Delaware for the purpose of acquiring the entire assets and business of the old Crown-Willamette Paper Company of Maine, including 91 per cent of common stock of the Pacific Mills, Ltd., British Columbia. Close to $40,000,000 of the new company's securities, in equal amounts of preferred stocks and bonds have been offered to the public and $15,000,000 additional has been allotted for subscription by stockholders of the old company. It is stated that applications from these stockholders were received in excess of the amount.

According to reports given out the assets of the new Crown-Willamette Paper Company exceed $60,000,000, being one of the largest industrial corporations on the Pacific coast and one of the largest paper producers in the world. The old company was organized more than 11 years ago and its predecessor companies began operating 40 years ago. During that time a very large part of the newsprint used on the Pacific coast and in the Rocky Mountain territory was and still is supplied by this company and its predecessors. Also, quantities of newsprint has been shipped to Australia and New Zealand. Reports have it that the demand for newsprint in the territories served by the company equals approximately the output of the Pacific coast mills and that the newsprint business is of rapidly increasing importance.

In Oregon the company has mills at Lebanon, Warrendale, West Linn and Oregon City. Mills are also operated in Camas, Wash., Stockton and Floristan, Calif., and, as well, the Crown-Willamette Paper Company controls 91 per cent of the Pacific Mills, Ltd., in British Columbia. Approximately 178,000 acres of timber land estimated to carry 4,800,000,000 feet of lumber is owned by the company in the coast states and valuable pulp leases are held in British Columbia. It has taken a long period of years for the company to acquire this timber land and it has been selected as to quality and accessibility. An extensive program of reforestation is being carried on by the company and only a few weeks ago a crew of 26 men began the work of planting small spruce, hemlock and fir trees in a denuded area of the company's camp No. 4 in the upper Young's valley, south of Astoria, Ore. A nursery at West Linn is maintained for this purpose and thousands of trees are sent out from there to the cut-over sections. It is expected that within a few years the company will be reforesting the denuded areas as rapidly as the timber is cut off.

The company owns the water power developed at the Floriston, Calif., and Camas, Wash., plants. A long-term lease which expires in 1954 with a renewal privilege of 50 years are the conditions under which water power is obtained at West Linn, Ore. Besides this readily available water and hydroelectric power, all plants are equipped with modern manufacturing facilities, and excellent transportation facilities. The company has in its possession splendid docks, over 45 miles of logging railroad, extensive logging equipment, several hotels, stores, townsites and homes for employes.

Extensive properties of the company also include a bag factory with a daily capacity of 3,000,000 bags and at Los Angeles a printing plant for the purpose of printing fruit wrappers. A subsidiary owns seven river steamers, ten barges and other equipment. Besides newsprint, wrappers and bags



Interesting Information for the Mechanical Superintendent

Right proportions of ingredients combined under proper conditions of Temperature, Pressure, Humidity, Speed and Time, make a "Quality Paper." Variation of any of these conditions lowers the quality of the product.

Among the conditions that must be uniform are the operation of Pulp Grinders, Pulp Beaters, and Paper Machines.

BRISTOL'S
Motion and Operation Recorders

are used in many plants to record the time and durations of these operations.

Our new catalogue No. 1600 fully describes these instruments and shows various methods of applying them.

The receipt of your address will bring this catalogue to you

The Bristol Company Waterbury, Connecticut

FOR 34 YEARS ... MAKERS OF ... BRISTOL'S ... RECORDING INSTRUMENTS

Branch Offices:

Boston, New York, Philadelphia, Pittsburgh, Birmingham, Detroit, Chicago, St. Louis, San Francisco

REED SPAFFORD

Pulp Screen

WHAT DOES YOUR **POWER** COST YOU

UNHEARD OF LOW **POWER** PER TON

HALF **POWER** SAVED

VERY LARGE CAPACITY

VERY LIMITED FLOOR SPACE

OFFERED ONLY AFTER MANY MONTHS OF CAREFUL DEVELOPMENT

Improved Paper Machinery Company

Nashua, N. H., U. S. A.

the company puts out various kinds of wrapping paper and tissues.

In spite of the fact that the affairs of the company will be directed by a new corporation, there will be no change in the management of the business. Louis Bloch will remain in the capacity of president of the company and the remaining members of the board of directors are: Charles R. Blyth, Herbert Fleischhacker, Mortimer Fleischhacker, William P. Johnson, A. R. Martin, Charles K. MacIntoch, C. A. Morden, Henry C. Olcott, A. J. Lewthaite, K. S. Pillsbury, Frank Schwacker and James H. Schwacker.

Work Begun at St. Helens, Oregon

The contract for the first unit of the new pulp and paper mill at St. Helens, Ore., was awarded to A. Guthrie Company, of Portland. Immediately upon this occasion the company began moving construction equipment to the factory site. A two-story 80x300-foot concrete building which is to house the machinery is covered by the contract.

W. P. Hawley, Sr., who is president of the St. Helens Pulp and Paper Company, as well as the Oregon City Pulp and Paper Company, is placing contracts for approximately $500,000 worth of machinery.

It is expected that the plant will be in operation within ten months. The project, when completed, will involve a capital outlay of about $1,500,000. Joseph Kaster has been named manager of the St. Helens plant and is on the grounds to keep in touch with the work. He was formerly of the paper mills at Salem.

Irving T. Rau has been appointed to the position of secretary-treasurer of the St. Helens Pulp and Paper Company. He was formerly purchasing agent of the Hawley Pulp and Paper Mill in Oregon City and has been connected with the plant for more than 16 years.

Backus-Brooks Plan Super Development

Development on the Cowlitz River in central Lewis County of the State of Washington of not only one of the biggest hydro-electric power plants in the Northwest, with construction costs of approximately $8,200,000.00, but of early industrial development of approximately $10,000,000.00 in other industrial plants for utilization of the power is virtually assured when on Saturday, January 16th, R. K. Tiffany, supervisor of hydraulics, granted a temporary reservoir and water appropriation to C. C. Garland of Tacoma, Wash., covering the Mayfield site on the Cowlitz River in that state.

In the application, Garland represented Mr. E. W. Backus of Minneapolis, Minn., largely interested in pulp and paper mills and other wood industries in Minnesota and Ontario, Canada. The Backus-Brooks interests are to develop the industries themselves as well as the power project.

It was only on showing of intention and resources for an immediate big industrial development by the same interests that were to construct the big electric power project, that Supervisor Tiffany gave the preference to the Garland applications for assignment to the Backus interests.

One of the first constructions in connection with the big power plant will be a large pulp and paper mill. While the initial unit planned is for 250 tons a day capacity, the intention and expectation has been disclosed of increasing this plant to an ultimate capacity of 1,000 tons daily, making it one of the biggest paper mills in the world.

In a letter to Supervisor Tiffany, date of January 15, after former conferences, G. B. Birklund, representing the Backus-Brooks interests, outlined their proposition definitely. He expressed belief that the preliminary investigation and borings could be completed in from six to eight months; that investigations were under way covering several prospective industrial sites and by the time the engineering was completed negotiations for industrial sites would be in shape, and that about two years would be required for the construction.

"Backus proposes to use substantially all the power that can be developed," he said, "that is 100,000 horsepower, in connection with industries which he will himself establish, including paper and pulp mills of up to 1,000 tons daily ca-

Progress in Paper Making

WITH progress in American paper making, we are concerned and connected. To commemorate the advances that have been made, the more important annals of the industry will be recalled from month to month in this space.

Improved Cylinder Moulds

In 1863, John F. Jones of Rochester, New York, invented an improved cylinder mould, in which provision was made for carrying away the water from the interior through hollow journals, thereby dispensing with the use of packing inside of the vat, and substituting stuffing boxes outside, thus facilitating the repacking and obviating much of the waste of stuff which is unavoidable with inside packing.

Established 1842

Cheney Bigelow Wire Works

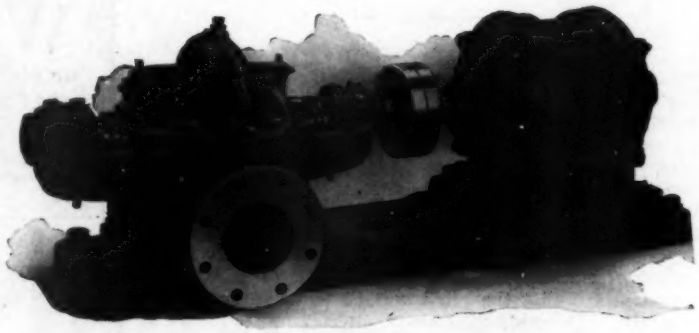
Experienced and Progressive

Fourdrinier and Cylinder Wires
Dandy Rolls and Cylinder Moulds
made and recovered

SPRINGFIELD, MASSACHUSETTS

ECONOMICAL PUMPING
Will Lower Your Pumping Costs

MANY tons of water are pumped for each ton of paper made. Allis-Chalmers' improved high efficiency pumps will reduce the cost of supplying this water. If you are figuring on replacing or adding any pumping equipment it will pay to investigate the economy of Allis-Chalmers' Centrifugal Pumping Units.



ALLIS-CHALMERS
MILWAUKEE, WIS. U. S. A.

DRY PAPER EFFICIENTLY
The Fulton Dryer Drainage System

—Increased production
—Decreased steam pressure on the dryers
—Reduced steam cost for drying

Better Sheet—Better Finish—Less Shrinkage

—and cockling prevented by drying with graduated temperature — Less pressure or vacuum on paper machine dryers.

We will gladly refer you to mills using the Fulton System and making the same grade of paper as you. They will tell you their experience with the Fulton System.

U. S. Patents Dec. 10, 1919, and June 7, 1921. Canadian Patents July 6, 1920, also patents pending.

Fulton Engineering Co.
MIDDLETOWN, OHIO
The Beverage Supply Co., 628 St. Paul St. W., Montreal, Canadian Representatives

pacity, and an insulite factory. Insulite is a product manufactured from sawmill waste and used very extensively for construction of refrigerator cars, cold storage plants and for numerous other building purposes.

"The location of the Backus-Brooks industries in the Northwest marks one of the largest features in its industrial development, comparable to the establishment of the Long-Bell industries and perhaps more advantageous to the state in that it will mean better utilization of timber and its by-products."

Expansion Planned at Oregon Mills

At a meeting of the board of directors of the Oregon Pulp & Paper Company at Salem, Ore., the following officers were elected for the ensuing year: F. W. Leadbetter, president; Dr. B. L. Steeves, vice-president; L. L. Leadbetter, secretary; G. S. Putnam was also elected to the board.

These changes were caused by the resignation of Mr. C. K. Spaulding, former vice-president, and Mr. Walter L. Spaulding, secretary, the former having disposed of their stock recently to Mr. F. W. Leadbetter, who now owns controlling interest of this mill.

At this meeting definite plans for enlarging the plant were also made. The Austin Co., engineers, are figuring on a contract for a new three-machine mill for the company. This machine room will be one story without basement and will be at right angles to the present main buildings, and parallel with the main street of the city.

Bagley & Sewall Co. of Watertown, N. Y., is arranging to build the pew paper machine and to rebuild the older ones which it is understood are to be moved into the new buildings alongside of the new No. 4 which will be erected as soon as the building is ready.

Mr. F. W. Leadbetter, president, has left for New York, where he embarks on February 9th for France for a three months' vacation. The new buildings will be erected during his absence.

The old buildings will be used for finishing rooms and for super calenders after the new mill is occupied.

Annual Meeting at Columbia River Mills

The annual meeting of the stockholders of the Columbia River Paper Mills of Vancouver, Wash., was held in the offices of the company in Vancouver, on Wednesday morning, January 20, 1926.

From the reports it was shown that the company had passed through a very successful year, even though this company is still in its infancy.

At the meeting of the board of directors the following officers were re-elected for the ensuing year: F. W. Leadbetter, president; W. B. DuBois, vice-president; J. J. Donovan, secretary; Hamilton F. Corbett, treasurer.

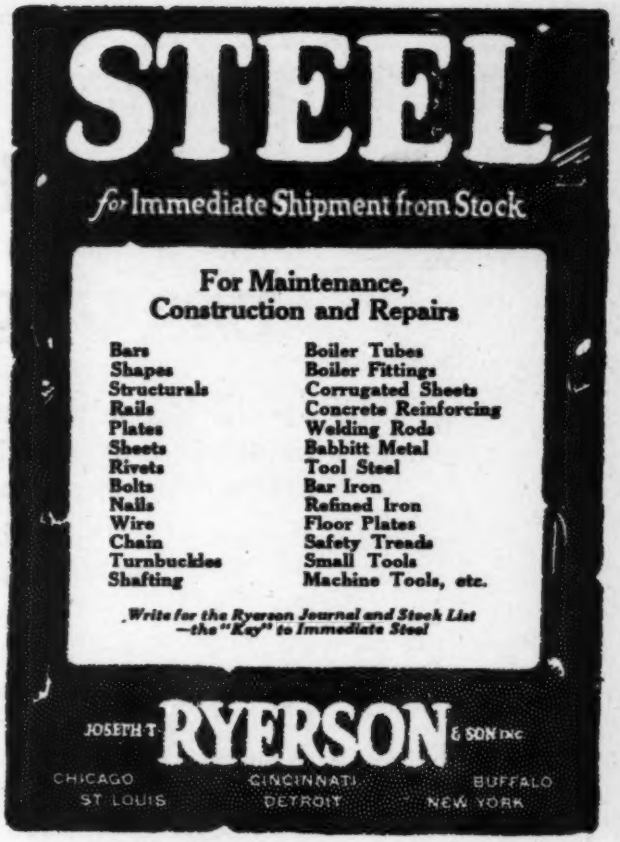
McBain Receives Appointment on Forestry Council

B. T. McBain, vice-president of the California Oregon Paper Mills, of Los Angeles, Calif., and general manager of the Columbia River Paper Mills, of Vancouver, Wash., today accepted an appointment tendered him by Honorable W. W. Jardine, Secretary of Agriculture of Washington, D. C., said appointment being membership on the council of the New Forest Experiment Station for the Pacific Northwest.

A little over a year ago, there was established a new Forest Experiment Station for the Pacific Northwest, following the policy of the Department of Agriculture at Washington to have a research branch of the Forest Service in each of the important forest regions of the country.

Representatives of the several forest interests and of the lumber industry will form an advisory council for this experiment station about its program of work and to bring directly to the attention of those concerned with forest management the work which this unit of the Department of Agriculture is doing.

Mr. McBain was for many years connected with the paper manufacturing business of the Pacific Coast before going to Wisconsin as director of manufacturing of Nekoosa Edwards



Write for interesting booklet "Gone Again"

When you receive belting bearing the manufacturer's recommendation that you join it with Crescent Belt Fasteners, you are really being offered *"Service Insurance."* The manufacturer has built a belt that he is proud of. He wants you to get all the service that he has built into it. He knows you will get this maximum service only when the belt is joined properly. That is his only reason for recommending Crescent Belt Fasteners.

CRESCENT BELT FASTENER CO.
247 Park Avenue, New York City

Detroit Graphite Company

DETROIT, U. S. A.

DEGRACO PAINTS

All Colors for Your Particular Needs

Specializing in the manufacture of paints in all colors to meet the particular requirements of paper and pulp mills.

A special service that will solve your painting problems.

Offices and warehouse stocks in all principal cities

The Tide Water Power Group

—for paper mill lubrication

Tycol Gear Compound	A soft, semi-fibrous grease for enclosed gears under heavy pressure.
Tycol Medium Yarn Grease	For beater bearings where high temperatures, heavy pressures and water are present.
Tycol Yarn Grease	For dryer and other bearings operating at high temperatures.
Tycol Lubricant No. 1	A medium hard grease for Jordans, grease lubricated calender rolls, and for general use.
Tycol Grease	A hard grease for replenishing Tycol Yarn Grease.
Tycol Gear Coating Soft	A viscous lubricant especially recommended for use on slow-moving open gears.

MAY we have the opportunity of sending one of our Staff Engineers to make a survey of your mill's lubrication requirements and to discuss the Tide Water Power Group with you?

TIDE WATER OIL SALES CORPORATION
11 Broadway, New York

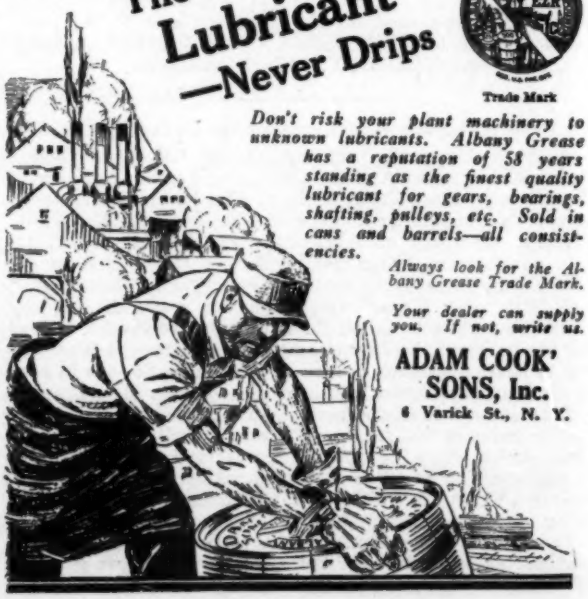
AVOID SHUT-DOWNS

Protect Yourself—DEMAND

ALBANY GREASE

The 100% Lubricant —Never Drips

Trade Mark



Don't risk your plant machinery to unknown lubricants. Albany Grease has a reputation of 58 years standing as the finest quality lubricant for gears, bearings, shafting, pulleys, etc. Sold in cans and barrels—all consistencies.

Always look for the Albany Grease Trade Mark.

Your dealer can supply you. If not, write us.

ADAM COOK' SONS, Inc.
6 Varick St., N. Y.

Paper Company. During his four years in the Lake States, he was secretary of the Forest Protective Association of that section, endeavoring not only to perpetuate the forest of the Lake States by reforestation but by education and fire prevention work so necessary for such ends.

Henry Porteous and Frank Lernicker, both employes of the Crown-Willamette Paper Company at Camas, suffered broken legs when a pile of dry pulp under which they were working at the plant caved in on them. The accident occurred during the middle of January.

An expansion program which will result in the expenditure of $2,500,000 on its mill at Millwood, Wash., has been decided upon by the Inland Empire Paper Company. Judson G. Rosebush, president of the company, made the facts known while he was in Spokane recently conferring with officials of the company.

F. W. Leadbetter, of Portland, who has been president of the Oregon Pulp and Paper Company, at Salem, Ore., since its formation in 1919, gained control of the company late in January through the purchase of the common stock of E. S. Collins, of Portland, and other investors. The paper company has capital stock of $2,100,000, of which $800,000 is preferred.

Ohio News

Miami Superintendents Visit Champion Mill

Forty Miami Valley paper makers were shown the $3,000,000 improvements, expended within the past five years, at the Champion Coated Paper Mill, of Hamilton, as an interesting feature of the January meeting of the Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association, held in Hamilton, January 30.

How the improvements have expedited the increased and more efficient production of the company was very interestingly shown the visitors by E. Kenneth Hunt, advertising manager of the Champion. One of the points revealed by Mr. Hunt was that it costs $11 per minute for operating twenty-four hours per day of this company.

Inspection of the mills was an incentive to William T. Schenck, of the Miami Coated Paper Co., of Franklin, to emphasize his points upon the necessity of modern machinery in today's paper mills.

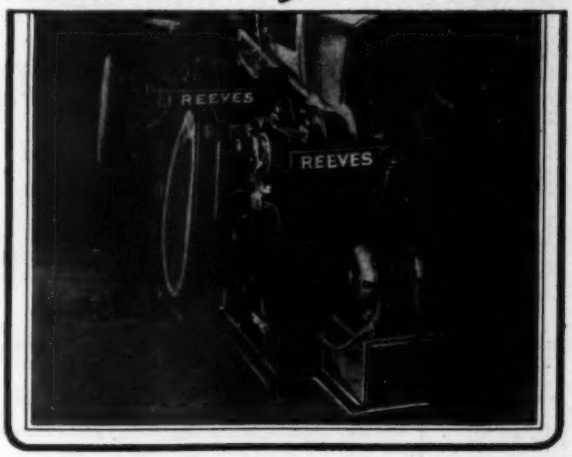
Discussion by men of experience was made upon the subject of the evening, "How Can Static Electricity Be Removed from Paper?" John MacMurray, Miami Paper Co., West Carrolton, was elected to the association as a new member.

The following members attended the banquet meeting: W. H. Cunningham, M. G. Benson, H. C. Colson, B. J. Cole, Mead Pulp & Paper Co.; W. A. Juergens, Reliance Electrical & Engineering Co.; C. H. R. Johnson, Homer H. Latimer, Beckett Paper Co.; William Rettig, E. H. Butterfield, Gardner-Harvey Co.; A. J. Allison, Frank Meilly, B. J. Wildenhaus, A. A. Simonds Co.; J. Ada Rits, Ohio Paper Co.; William T. Schenck, H. J. Lehman, Walter H. Poos, Miami Valley Coated Paper Co.; N. J. Niks, Chillicothe Paper Co.; Albert Noeckle, J. M. Dick, Dayton Process Engravers; R. J. Eminger, Miamisburg, national secretary; J. M. Hutchison, U. B. Publishing Co., Dayton; F. L. Zellers, Bauer Bros. Co.; Thomas O'Flynn, E. H. Heilman, E. T. Judd, E. S. Clark, Wardlow-Thomas Paper Co.; H. W. Peters, Pettigrew Peters Co.; John MacMurray, W. A. Clark, H. W. Server, Charles Server, C. A. Miller, Miami Paper Co.; R. Jenkins, Ohio State University; Charles Soule, C. A. Kelly, T. A. Cape, Dr. L. H. Frechtling, E. Kenneth Hunt, Homer C. Ferguson, Roy W. Maggart, Phil H. Lockman, K. Jackson, R. C. Warder, C. H. Mennion and A. S. Wells, of the Champion Coated Paper Co.

The February meeting of the association will be held February 27 at the Hotel Manchester, Middletown.

In the resignation of B. M. Bishop from the Gardner-Harvey Company to go to Hartsville, S. C., to accept the gen-

Accurate Speed Control!



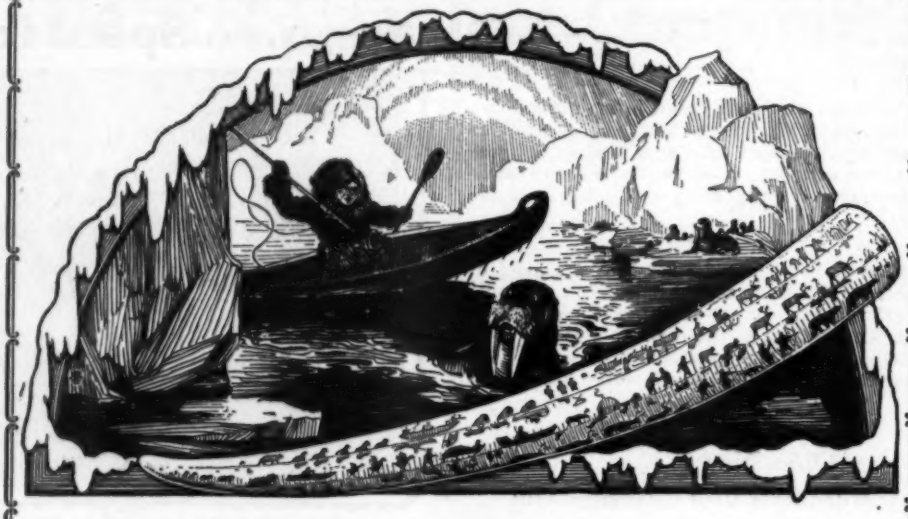
STEP one, step two, step three—a fixed number of speed changes — accurate speed control is impossible on your production machines and conveyors with ordinary "step" control devices.

Steps are not exact enough for best results. Often, for some certain job, a machine's most efficient operating speed is between the steps, and you cannot get the "in-between" speed. You have to use a speed that is just near to the actual speed you need.

Getting the "in-between" speeds is a simple matter with the REEVES Variable Speed Transmission. The REEVES has no steps—it enables you to get any speed between fastest and slowest, even to the smallest fraction of a revolution. You never have to be content with running a machine at almost the right speed—the exact speed for any requirement is instantly at your command. Write today for catalog A-66 and full information about this simple, inexpensive device which will give you accurate speed control on any machine in your plant.

REEVES PULLEY COMPANY
Established 1887
Columbus, Indiana
Representatives all Over the World

REEVES
Variable Speed Transmission



Stories Without Words

IN THE land of midnight sun and noon-day twilight, there is a people without an alphabet. Yet the urge of autobiography is present, and long hours of aurora-lighted leisure are spent in transcribing on some unwilling medium—a walrus tusk at best—"The story of my adventures."

The exploits of hunters, the experiences and observations of travelers, the researches of historians, the philosophy of great men, all stimulate imagination, broaden outlook and contribute to the pleasure and effectiveness of living.

We are heirs to the benefits others have obtained from mixing with the world. Their words, multiplied millions of times in books and newspapers, become the property of all mankind. In this respect we have an immense advantage over past generations. No walrus-tusk limitation is ours. We have paper at our call.

Hammermill Paper Company

Erie, Pennsylvania

eral management of the Sonoco Products Company, a new position—that of general superintendent of Mill No. 2 has been created by the Gardner-Harvey Company. William Rettig, associate superintendent with Mr. Bishop, previously was placed in full charge of Mill No. 2, while Frank Ditmeyer and Walter Hadley now hold the two tower boss posts.

Sorg and Oglesby Hold Annual Meeting

Officers of the P. A. Sorg Paper Company and of the Oglesby Paper Company, of Middletown, were elected January 29 as follows:

Sorg Company—J. A. Aull, president; M. T. Hartley and A. F. Smith, vice presidents; H. C. Johnson, treasurer; L. C. Anderson, secretary; C. E. Aull, assistant secretary and treasurer.

Oglesby Paper Company—J. A. Aull, president; L. C. Anderson, vice-president; A. F. Smith, vice-president; M. T. Hartley, secretary; H. C. Johnson, treasurer; C. E. Aull, assistant secretary-treasurer.

New England News

Planning Reorganization of A. W. P. Co.

That a reorganization plan for the American Writing Paper Co. is very soon to be presented is among the interesting bits of news which have been received of recent date. Boston financiers are manifesting attention to these reports and with the return of Sidney L. Willson, receiver, from a southern trip, it is expected that the tax controversy with the Federal Government will soon be straightened out whereupon the plan will probably be present.

A plan was prematurely put forward last summer but it was entirely too favorable to the interest of the bondholders, in the view of the stockholders, who under any scheme must be the ones to furnish new capital. The plan which will finally be adopted, it is believed, will involve the sale of several of the New England mills owing to obsolescence of their equipment for modern paper making. In this connection, it is of interest to note that two of the company's Massachusetts mills have been closed for long periods of time of late. The committee protecting the interests of common and preferred stockholders declare that the water power rights of several of the A. W. P. mills are worth far more than their papermaking value, and they believe that some of these water powers may actually bring the value of those properties up to the figures carried on the company's books.

Canadian Paper Board Buys Uncas Mill

That the Uncas Paper Board Co., problem has at last been settled in the best possible manner seems to be the verdict of several of its creditors, themselves companies who are bound to lose under the terms of the sale. On February 1st, the sale of the Uncas Paper Board Co., was held at Norwich, Conn., under the order of the Federal Court at New London. The only bidder who it is understood had dickered for the company in preliminary negotiations was John G. G. Kerry, of Montreal, P. Q., president of the Canadian Paper Board Co., Ltd., manufacturer of various grades of paper board with a mill near Montreal and two in Ontario. The price paid was the minimum figure set by the court, $250,000. So far as is known at this writing, the plant will be operated as a branch of the Canadian Paper Board Co., Ltd. If Mr. Kerry desires to operate it at capacity, it will probably be necessary for him to increase its power plant.

Hollingsworth & Vose Co., are continuing with marked success their series of safety meetings under the management of Nathaniel F. Bartlett, the company's traffic manager who has taken over that phase of industrial management also. Two meetings were held during January, one at each mill. In addition to an address by Mr. Bartlett, there were two movies shown, one a feature film, the other a safety picture. In addition, there were clear cut charts shown by stereopticon, illustrating the substantial gains made by the accident prevention campaign of 1925. In the East Walpole mill, there

Starch

ECONOMY can never be mistaken for cheapness. In the matter of sizing material, starch is cheaper than an all-glue size, yet the results are identical—in fact, the paper made with starch sizing is stronger.

FOX HEAD NIAGARA SPECIAL PAPER

Our experts can show you how these starches can be used advantageously in your mill. They will gladly call on request.

Corn Products Refining Company
17 Battery Place New York

Starch

Latest Type Crepe Machine

Dryer 48" diameter by 84" face.

Same machine can be built in any desired width and with any number of dryers. This machine is equipped with Drum Winder and Double Automatic Collapsing Reel.

Hudson-Sharp Machine Co.
Green Bay, Wis.

Selling Agents:
Gibbs-Brower Co., 261 Broadway, N. Y. C.;
189 Jackson Blvd., Chicago

ZAREMBA EVAPORATORS

Have Established an Enviable Reputation

IN THE PULP INDUSTRY

Satisfactory Service Rendered by More than Fifty Zaremba Evaporators concentrating

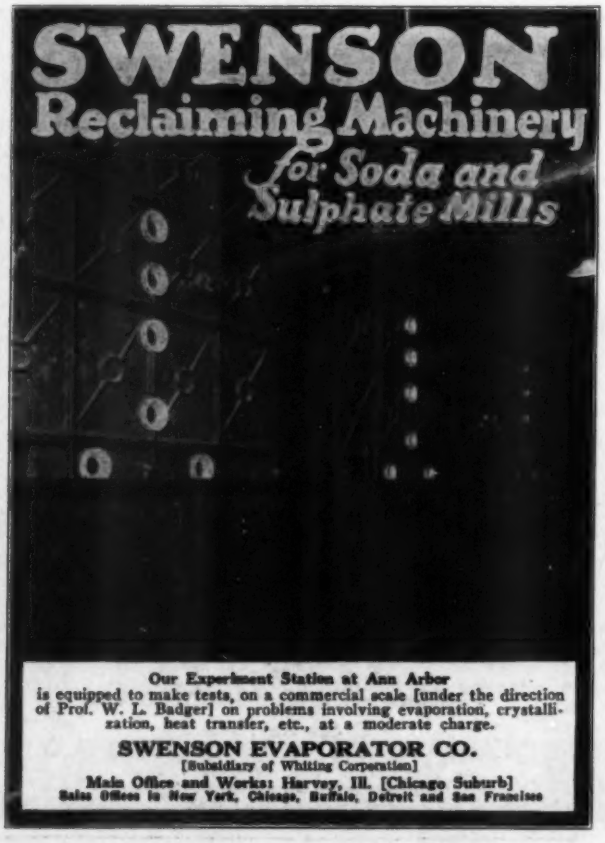
SULPHATE BLACK LIQUOR
SODA BLACK LIQUOR
SULPHITE WASTE LIQUOR

Due to wide experience, thorough engineering, and painstaking construction Zaremba Equipment is acknowledged to be in a class by itself

Consultation invited on new projects or where existing evaporators should be rebuilt for good results

ZAREMBA COMPANY

506 CROSBY BUILDING **BUFFALO, NEW YORK**


SWENSON
Reclaiming Machinery
for Soda and
Sulphate Mills
Our Experiment Station at Ann Arbor
is equipped to make tests, on a commercial scale [under the direction of Prof. W. L. Badger] on problems involving evaporation, crystallization, heat transfer, etc., at a moderate charge.
SWENSON EVAPORATOR CO.
[Subsidiary of Whiting Corporation]
Main Office and Works: Harvey, Ill. [Chicago Suburb]
Sales Offices in New York, Chicago, Buffalo, Detroit and San Francisco

The AJAX Self-Cleaning Rocking Grate
15% Reduced Fuel Consumption
10% Increased Steam Capacity
25% Reduced Grate Repairs
25% Less Labor

was a drop of nineteen in the number of more or less serious accidents and a gain of 20 per cent in the amount of lost time of a year ago. At the West Groton mill, the improvement has been less marked but none the less real and a clear result of the Safety Campaign.

Connecticut Valley Superintendents

An excellently attended meeting of the Connecticut Valley Division of the American Paper & Pulp Mill Superintendents' Association was held at the Nonotuck Hotel on January 16. It was stated by some to be the largest gathering of the Valley superintendents since the inception of the organization, there being some 120 present.

The selection of Mr. Rahmanop, superintendent and manager of the Burgess Mill in Berlin, N. H., as the first speaker of the occasion, proved a very wise one for his speaking ability and the extremely interesting subject that he was able to discuss made him an altogether admirable "opening number." The speaker told of the vast resources of the Brown Co., its huge pulpwood reserves, its laboratory methods of production and its varied list of products.

Another Brown Co. speaker, Mr. N. L. Nourse, discussed the manufacture of sulphite and Alpha pulp in detail, another subject of peculiar interest, because Brown Co. sulphites are recognized as leaders and are in particular demand among fine paper mills. The questions asked of Mr. Nourse were unusually extensive and developed many supplementary statements by the speaker of great interest. That Alpha, the company's famous super pulp, is a pure cellulose that is rapidly taking the place of rags, was fully brought out.

The discussion of Rayon, and its taking of sulphite pulp also interested the fine paper manufacturers as well as another factor, the effect of Rayon on paper making through its presence in cotton rags.

The banquet was held in the splendid dining room of the Hotel Nonatuck which has been the scene of so many similar banquets in the past. Chairman Charles N. Mooney of the Division delivered the address of welcome; Former Mayor of Holyoke, John J. White, acted as toastmaster. The speakers included Clifton Crocker of Crocker McElwain Co., and Former Mayor N. P. Avery.

An excellent minstrel show provided the amusing and entertaining feature of the evening. The group who provided this are known as the "Holyoke Troubadours."

Mr. Crocker, one of the evening speakers, had a real contribution in his talk. He crystallized the thought that paper making in its technical detail today is more in charge of foreman and laboratory men than of the superintendent who must be a manager and leader in the bigger sense. He recommended a technical training for young men desirous of rising in the paper industry, but a training in a college of standing where the qualities of leadership would also be trained.

Mayor Avery told of the tremendous development of power through the Holyoke Water Power Co., discussed the great power mergers under Samuel Insull and the recent merger of International Paper Co., New England Power Co., and Stone & Webster interests.

F. M. Temple

Mr. Frederick M. Temple, president of the Merrimac Paper Co., passed on during January. He was born 58 years ago in Reading, Mass. His early life and education was that of most young men on the outskirts of Boston. In other words, it was good. He soon came under the observation of Carter Rice & Co. Corp. and was employed by the late James Richard Carter, the founder of that great firm. For 15 years he served the Boston merchants, acquiring knowledge of book and coated papers which served him in good stead when his manufacturing opportunity came with the Pepperell Card & Paper Co., of Pepperell, Mass. As manager of sales at this mill, he added to his paper making and selling lore and in 1897 was called to Lawrence and given the post of sales manager by Charles Mayo, owner of the Merrimac Paper Co., of that city. This position was held by Mr. Temple until 1914, when an opportunity presented itself of acquiring the prop-

At Kalamazoo

Kalamazoo Vegetable Parchment Co. orders—then reorders—Dayton High Speed Beaters

Last spring we reconstructed one beating engine of the old type into a latest type Dayton High Speed Beater—to handle stock containing 20% rag. After exhaustive tests a second beater was reconstructed. Only recently an order for six more was received.

Conditions before: 1100 lb. furnish requiring from 1½ to 2 hours' beating and dumping. Conditions after: 1600 lb. furnish requiring approximately 45 minutes per furnish, at a 7% to 8% density—a very favorable showing at Kalamazoo for Dayton.

High Speed Beaters

In other words the Kalamazoo Vegetable Parchment Company is now obtaining:

Heavier furnishes
Faster beating
Greater output
More uniform product
Saving in power
Saving in labor

Dayton High Speed Beater performance merits your investigation. A list of representative mills, having Dayton High Speed Beater installations will be mailed upon request.

We Rest Our Case on Performance

DB & H

The Dayton Beater & Hoist Co.

Dayton, Ohio

MORSE SILENT CHAIN DRIVES

A wide range of speed reductions

Morse Silent Chain Drive from motor to line of soda recovery tanks.

There's economy in using high speed motors only when the drive is a dependable speed reducer. A wide range of positive speed reductions is possible with Morse Silent Chain Drives. They are flexible, dependable, efficient, and especially effective on short centers.

Over 5,000,000 H. P. installed, 6,000 to 250 r. p. m. and slower. Many in use 15 and 20 years ago are still operating.

The nearest Morse Engineer is always available

Morse Chain Co., Ithaca, N. Y., U. S. A.

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Charlotte, N. C.
Chicago, Ill.
Cleveland, Ohio.
Denver, Colo.
Detroit, Mich.
Louisville, Ky.
Minneapolis, Minn.
New Orleans, La.
New York City, N. Y.
Omaha, Neb.
Philadelphia, Pa.
Pittsburgh, Pa.
San Francisco, Calif.
St. Louis, Mo.
Toronto, Ont., Canada.
Winnipeg, Man., Canada
508

FAWCUS
Herringbone Gear Reductions

They increase production, save labor and decrease wastage on Calenders. Write for literature. Special Machinery—Couplings—Gears.

FAWCUS MACHINE CO., Pittsburgh, Pa.
2819 Smallman St.

GRANT GEAR WORKS

Estimates and gear advice promptly and cheerfully given

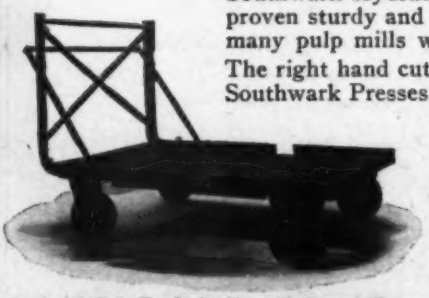
Send for Our Catalog of Stock Gears

Office and Works
Second & B Sts., Boston, Mass.

SOUTHWARK HYDRAULIC PRESSES

for Pulp, Sulphite, Baling, Etc.

HYDRAULIC PUMPS, VALVES, FITTINGS, SHOCK ABSORBERS, PULP TRUCKS, ETC.



Southwark Pulp Truck, for Use with Presses Shown at the Right. Saves Time and Labor

Southwark Hydraulic Presses for dehydrating pulp have proven sturdy and efficient machines in every one of the many pulp mills where we have installed them.

The right hand cut shows an installation of four 600-ton Southwark Presses in a large pulp and paper mill. These presses are designed for use with Southwark Pulp Trucks, the trucks are loaded and run under the press, the pulp being compressed directly on the truck.

This feature gives fast operation, saves labor and eliminates curbs, boxes or other containers on the press.

Four 600-Ton Southwark Pulp Presses, Minnesota & Ontario Paper Co., International Falls, Minn.

SOUTHWARK FOUNDRY AND MACHINE CO.

AKRON, O.
100 E. South St.

400 Washington Ave.
PHILADELPHIA, PA.

CHICAGO
343 S. Dearborn St.

erty from the estate of Mr. Mayo. His partner in this venture was Mr. Charles Thompson.

Since that year, the company has steadily expanded and its coated paper grown in favor throughout the trade. Mr. Thompson is treasurer of the company and is expected to succeed Mr. Temple as president.

W. F. McQuillen

It was with great sorrow that the entire merchant and manufacturing paper trade of the United States learned of the sudden death of William F. McQuillen. Mr. McQuillen died on Thursday, February 4th, at the Royal Palms Hotel, Miami, Florida, where he had gone for a winter vacation and rest.

Born 65 years ago in Dedham, Mass., Mr. McQuillen died, the most outstanding figure in the paper trade of New England and one of the acknowledged leaders of the industry throughout the country. He gave his life to the paper business; it was his work and play. Forty-six years ago he entered the employ of John Carter & Co., of Boston, while his brother about that time became affiliated with Carter Rice & Co. In 1887 the brothers, with Charles Bryant, purchased the paper business of Amariah Storrs & Bement, which they organized later. The business was continued by them until the death of R. C. McQuillen and Charles Bryant, whereupon William F. McQuillen became sole manager. In 1920, the business was reorganized and William B. Stevenson was elected vice-president and Frank Cummings president, with Mr. McQuillen continuing as treasurer.

W. F. McQuillen has filled many positions of honor in the various trade organizations. He has been president of the National Paper Trade Association, the New England Paper Merchants' Association and the Boston Paper Trade Association. Funeral services were held at All Saints' Episcopal Church, Beacon street, Brookline, on Monday, February 8th.

William F. McQuillen is survived by his wife, Mrs. Helen F. McQuillen. There are no children.

Succeeds Mr. Griffin

W. D. Judd has been chosen president of the Hampshire Paper Co., of South Hadley Falls, Mass., at the annual meeting of the company and the Carew Manufacturing Co. Mr. Judd was elected to succeed the late Solomon B. Griffin, of Springfield. He was also re-elected president of the Carew Manufacturing Co., with George Bardwell as treasurer. C. Southworth was elected treasurer of the Hampshire Paper Co.

Increased Freight Rates on Supplies

The New England Freight Association, after hearing the opposition of the paper stock dealers through the National Association of Waste Material Dealers and the paper mills through the New England Paper & Pulp Traffic Association, has decided to publish the increased rates on china clay, waste paper and old rags locally, on Boston & Maine Railroad points. These increased rates are, however, limited to 50 miles.

On waste paper, the increases will amount to 20 cents per ton for the first 15 miles; 40 cents per ton to 20 miles; 10 cents per ton for 30 miles; 20 cents up to 50 miles. The increases on china clay and waste paper are similar, and are the same as for waste paper except that for 26 to 30 miles, the increase is 30 cents per ton with no change for rates in excess of 35 miles.

At the recent annual meeting of the stockholders of American Paper Mills Corporation, whose offices and warehouse are at 261 Eleventh avenue, New York City, Joseph H. McCormick was elected president; M. H. Freimark, vice-president and John R. Robinson, secretary-treasurer and general manager.

After trying out the plan of appointing exclusive sales agents for its lines in the city of Detroit, the Peninsular Paper Company, of Ypsilanti, Mich., has extended this policy to New York, and expects ultimately to market its products all

Rhoads Tannate Leather Belting

THE above picture shows a cone drive with an 8-inch heavy double Tannate Belt. It runs the main shaft and lower cone pulley of stack drive on a Fourdrinier machine situated on the floor below.

In October, 1924, this paper company gave us an order for an 18-inch heavy double Watershed Tannate Belt fifty feet long. Since then they have installed sixteen other Tannate belts. Two were 6-inch light doubles, the others were 8-inch and 10-inch belts, all regular weight or heavy doubles.

They find that it pays to use Tannate. It saves trouble and increases output.

J. E. RHOADS & SONS

PHILADELPHIA.....47 North Sixth Street
NEW YORK.....112 Beekman Street
CHICAGO.....334 West Randolph Street
ATLANTA.....80 South Forsyth Street
CLEVELAND.....1200 W. Ninth Street

Factory and Tannery: Wilmington, Del.

TANNATE TRADE MARK

RESILIENT RUBBER ROLLS

That are snappy but not soft
Are the kind to use for paper machines

Made By

STOWE & WOODWARD COMPANY

The Rubber Roll Makers NEWTON UPPER FALLS, MASS.

THE WATERBURY FELT CO.
SKANEATELES FALLS
New York

FELTS and JACKETS

Top and Bottom Wet Felts for board machines, with all the qualities requisite to insure long life and continuous production.

They Satisfy

1864 1925

"Excelsior" Felts

For EVERY GRADE of PULP & PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made *the first endless paper machine felts manufactured in America.*

Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

Sold by
BULKLEY, DUNTON & COMPANY
75-77 Duane Street, N. Y
and direct

LOCKPORT Felts

EXCLUSIVE MAKERS OF

Paper Makers' Felts

Have You Run Them?
If Not, Why Not?

Are You Interested in Accurate Running Felts?

Give Us a Trial
Get Authentic Information
Ask the Men Who Run Them

Yours for service

LOCKPORT FELT CO., Newfane, N. Y.

over the country in the same manner. As of January 1, 1926, the following concerns are agents for the Peninsular papers in the metropolitan district: Beekman Card and Paper Company, Bishop Paper Company, J. E. Linde Paper Company, Henry Lindenmeyer & Sons, Manhattan Card and Paper Company, and the Union Card and Paper Company.

British Correspondence

Monthly Report on Paper Industry

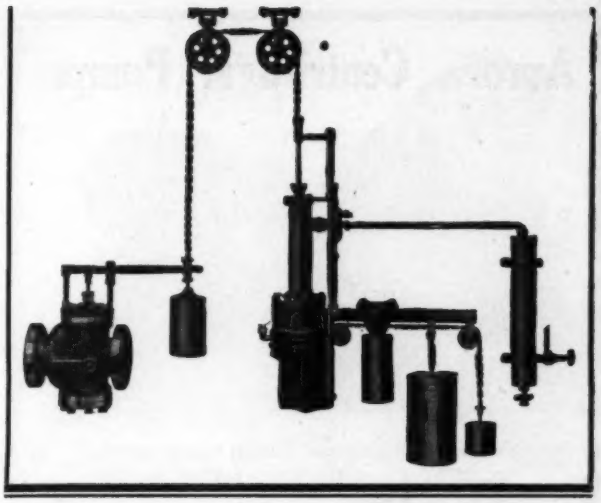
The conditions in the trade have made a noticeable improvement recently, and the industry finished the year with higher hopes than even the optimists thought possible a few months ago. For the ten months—January to October, 1925, British exports of paper and board exceeded those of the corresponding period last year by nearly 6 per cent. This increase is spread over most grades of paper. The wrapping section, however, is still a depressing feature, this year's exports of 8,950 tons comparing very unfavorably with last year's figure of 28,000 tons. In January to October, 1924, 171,294 tons of wrappings and packings were imported, and up to October of 1925 the total had reached 180,746 tons. This includes grades and varieties of wrappings which remain outside the tariff proposed by the Safeguarding Committee on Packing and Wrapping Paper, whose report has recently been published by the Government. The figure mentioned also includes, however, a fair tonnage which will eventually be included in the output of British mills. Recent inquiries have revealed the fact that with their present equipment, British wrapping mills could cope with another 100,000 tons, and it is estimated that the volume of imported wrapping paper which might be made by English mills would amount to 150,000 tons, which figure makes the present export of wrappings appear almost negligible.

More paper is being made and consumed in England today than before the war, and the output capacity has also increased, making it essential that a larger volume of home and foreign consumption of home manufactured papers shall be established as soon as possible. The principal feature of interest in this connection is the recommendations of the Safeguarding Committee, extracts from the report of which are given further on in these notes. It is considered to be beyond doubt that the Government will pass the measure in February next, and there are already signs that importers are commencing to take advantage of the intervening period in order to accumulate stocks which can be sold just below the English level when the tariff begins to operate.

Better conditions are beginning to be evident in the wrapping section already, some improved demand has been shown and there have been several new sources of inquiry. Business might still be considerably improved in the woodfree section, and it is anticipated that the imposition of a tariff duty on foreign wrappings will work out in an indirect manner to the benefit of the woodfree section, by checking the tendency on the part of the wrapping mills to turn their attention to other classes of paper, the inevitable result of which will be more work for other branches of the industry, as well as the woodfree section.

The Times Trade Supplement reports that at the present moment comment has been aroused by the report that a large tonnage of newsprint has been sold to Great Britain for delivery in 1926 at a figure which is below the relative selling price in America. It is apparently being inferred that American producers are disposing of surplus production, and that the matter has a very close bearing upon the questions of Canadian expansion and the Australian concession.

No real evidence is obtainable yet which proves that the Australian tariff concession on Canadian newsprint is working seriously to the detriment of British trade. Exports of English newsprint continue to increase in volume, but it is not expected that this condition of affairs will last much longer, as consignments of Canadian newsprint have been booked for the Commonwealth market, and it is reported that orders for 20,000 tons have been received by mills in British Columbia. Although the Canadian manufacturers possess certain natural advantages, and are expected to make a great effort to obtain a good outlet for their increased production of newsprint, it



Accurate control of steam to the digesters

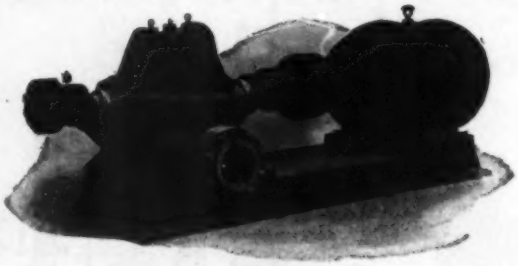
Mason Regulators are made in all types and sizes for reducing and controlling steam, air and water pressures and regulating pumps, engines, blowers, motors and furnace draft.

DAY after day, year after year, the Mason Combination Reducing Valve keeps steam entering the digesters at absolutely constant pressure, regardless of fluctuations in boiler pressure or volume of steam required.

The Mason Combination Reducing Valve is recommended for use on digesters by an organization that has specialized in the development of dependable pressure control equipment for more than forty years. It assures lasting accuracy with minimum attention and is easily adjusted to meet widely varying conditions. Mason engineers will gladly give you the benefit of their experience in working out successful digester control applications.

Mason Regulators
MASON REGULATOR CO.
Boston, Mass.
8854

Aurora Centrifugal Pumps



Type OMD

Aurora pumps are made in many types, to meet all conditions found in the paper mill field.

We specialize in horizontally and vertically split open and inclosed impeller, single and multi-stage and deep well turbine centrifugal pumps as well as deep well reciprocating pumps.

A card from you stating your conditions places our engineers at your service and results in a saving to you.

AURORA PUMP & MFG. CO.

Home Office and Factories, Aurora, Ill., U. S. A.

TABER-PUMPS

CENTRIFUGAL & ROTARY

Fig. 192

No more stuffing box trouble.

A sturdy pump for paper mill use. Particularly well suited for handling chemical solutions. Built in iron, semi-steel, and bronze. Send for Bulletin.

Taber Pump Co.

Buffalo, N. Y.

PUMPS

INDUSTRIAL—AGRICULTURAL—MUNICIPAL—RESIDENTIAL

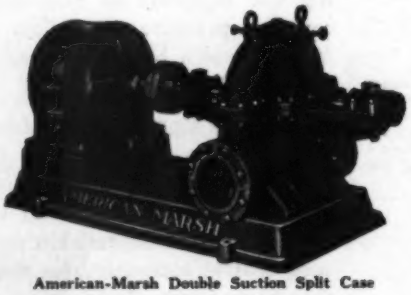
A Type for Every Service

THE GOULDS MANUFACTURING COMPANY

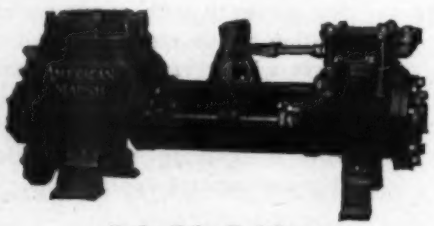
SENECA FALLS, N. Y.

GOULDS

SIMPLEX—DUPLEX—CENTRIFUGAL



American-Marsh Double Suction Split Case



Duplex Boiler Feed Pump

Simplex-Duplex Centrifugal

AMERICAN-MARSH PUMPS

Protect Your Pump Investment

YOU don't want to replace your pumping equipment every six months—you don't expect to, and when you specify American-Marsh Pumps you don't have to. Their term of service is reckoned in years rather than months, as their use for thirty years has proven. It is this record of long continuous service that protects your investment when you install American-Marsh Pumps.

There is a pump for every type of service, and what we claim for them we know they will do.

Write for Bulletin on the Type Interested In
Put Your Pumping Problems Up to Us

THE LINE INCLUDES

BOILER FEED PUMPS	AIR COMPRESSORS
WET VACUUM PUMPS	STOCK PUMPS
SUCTION PUMPS	DEEP WELL ENGINES
CONDENSATION PUMPS	BILGE PUMPS

And Many Other Types

AMERICAN STEAM PUMP COMPANY

Chicago Office
926 Monadnock Block

Battle Creek, Michigan

New York Office
17 Battery Place

is felt in this country that if efficiency and reliability of production count for anything, the English newsprint is likely to remain in favor with Australian buyers for a long time.

Things are fairly quiet with the fine paper mills, and short time is still prevalent with the handmade mills. Woodpulp prices have hardened all around as a result of the good demand and relative shortage of available pulp. In the case of sulphate pulp, it is reported that contracts for 1927 have been entered into. Following the recent severe weather which has been experienced, an early closing of the Scandinavian ports may be expected. Esparto prices remain firm, but there is a probability that the increased use of fibre may tend to stiffen market quotations before long.

Wisconsin News

Appleton Holds "Veterans' Dinner"

Something unique in the annals of Appleton, Fox River Valley paper mill center, occurred when on January 13 of this year, 104 employes of paper mills and allied plants were entertained at a "Veterans' Dinner." All of them had served their respective employers for more than twenty-five years, and some of them were very close to the fifty-year mark. Nine plants of the industry were represented. There were other industries but they furnished considerably fewer veterans of such long service.

Among the plants represented at the banquet were: The Fox River Paper Co., with 35 of its 52 veterans of more than twenty-five years' service present; the Kimberly-Clark Company, with 22 veteran employes of its local mill; the Patten Paper Company, with 11 veterans; the Appleton Wire Works, with 14; Appleton Machine Company, with 8; and the Thilmany Pulp and Paper Company, Valley Iron Works, Appleton Woolen Mills, Tuttle Press Company, with smaller numbers.

The main speaker at the occasion was Douglas Malloch, of Chicago, well known poet, humorist and philosopher. Other speakers included Elmer H. Jennings, of the Thilmany Pulp and Paper Company; F. J. Harwood, president of the Appleton Woolen Mills; F. E. Saecker, president of the Appleton Machine Company, and G. E. Buchanan, an officer of the Appleton Wire Works and the Tuttle Press Company. The veterans were presented with souvenirs, and the oldest of them received special awards.

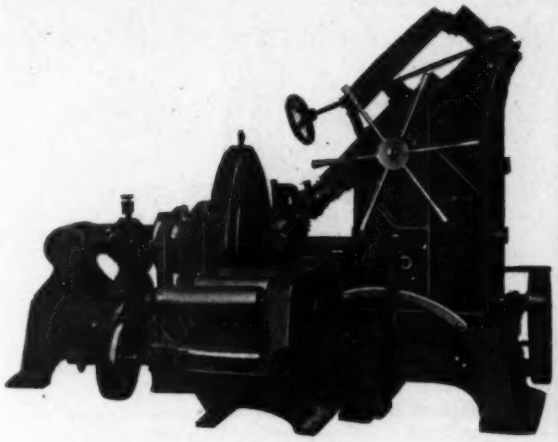
Annual Meetings

Nekoosa-Edwards Paper Co.—The following officers were elected by the Nekoosa-Edwards Paper Co. last month: L. M. Alexander, president; J. G. Rosebush and L. E. Nash, vice-presidents; J. E. Alexander, treasurer; C. A. Jasperson, secretary. The five with J. B. Nash, L. M. Hanks, G. W. Kibbe and F. J. Wood are the board of directors. All were re-elected.

Grandfather Falls Paper Co.—At the annual meeting of the Grandfather Falls Paper Company, of Merrill, the following officers were elected: L. N. Anson, president; John O'Day and E. F. Hanf, vice-presidents; George A. Foster, secretary-treasurer; J. N. Cotter, assistant treasurer; W. J. Sullivan, assistant secretary and general manager. The directors are the foregoing and F. W. Canfield.

Marathon Paper Mills Co.—The most successful year in the history of the organization was reported for the Marathon Paper Mills Company at the annual meeting of stockholders and directors in January. The following officers were re-elected: C. C. Yawkey, president; Walter Alexander, vice-president; D. C. Everest, secretary and general manager; B. F. Wilson, treasurer. Directors include the foregoing and C. J. Winston and W. H. Bissell. P. M. Wilson was renamed assistant secretary, and A. M. Van Douser assistant treasurer.

The safety spirit is at its height in the mills of the Kimberly-Clark Company. What enthusiasm that is not kindled in the inter-mill contests, or in the inter-department contests is being aroused in a new scheme, that of dividing the mill



A New Two-Man Barker

Built to cut down waste and increase production, this barker offers you these features:

Knives are adjustable
Ball bearing mounted cutting head
Eight knives
Minimum upkeep

The only knife barker with adjustable knife head features. Built heavy, rigid. Requires only 15 horsepower to operate. Capacity 2 inch to 12 inch diameter—wood in 2 or 4-foot lengths—18 to 20 cords per day (10 hours). *Produces clean wood with a minimum waste.*

This new barker is a piece of equipment every pulp mill needs for efficient production.

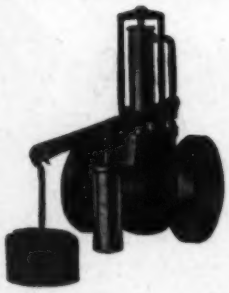
Are you interested? Write for Bulletin No. 1 MBA.

GREEN BAY BARKER CO.

Green Bay, Wis.

Makers of the famous Barker-International Pulp Screen

VALVE MAKERS FOR OVER FIFTY YEARS



WINTER is here, and in spite of everything, it's hard to keep the coal bill down. But a Davis pressure regulator will help. It takes steam at boiler pressure and delivers it at reduced pressure for heating plants and auxiliaries. And it's on the job, keeping the coal bill down all the time. It's built for continuous trouble-proof service.

The Davis Pressure Regulator is dependable because it is mechanically simple. Pressure balanced by weight—not by springs which may deteriorate. An oil dash pot gives steady service without chattering. And the lever makes its action visible—you can test it by hand.

DAVIS VALVE
STEAM SAVERS SINCE 1875
SPECIALTIES

G. M. DAVIS REGULATOR CO., 414 Milwaukee Avenue, Chicago, Ill.

PI2—B—BTG

Paper mills
need this valve

Fig. 297, flanged, Standard Iron Body Y or Blow-Off Valve, with yoke and renewable seat rings.

Wherever thick pulps are handled, a Jenkins Y Valve fills a real need. It can be entirely relied on to provide a full, free passage, since the flow, being practically in line with the pipe is uninterrupted. It is fitted with a Jenkins Renewable Disc and renewable seat ring.

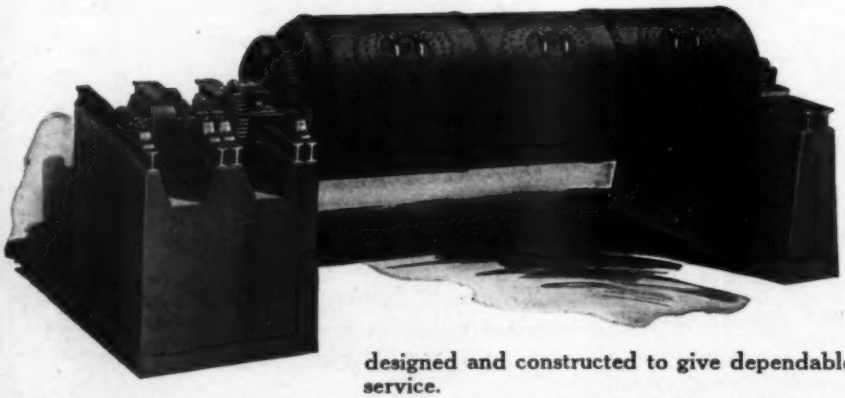
The valve also makes good in boiler blow-off service—an exacting test of a valve's worth.

At supply houses everywhere.

JENKINS BROS.
80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street..Philadelphia, Pa.
646 Washington Boulevard..Chicago, Ill.
JENKINS BROS., LIMITED
Montreal, Canada London, England

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864

Buy the Right Equipment!



There is a big difference between buying the **right** equipment and **buying** equipment **right.** Steady, uninterrupted performance is significant of **right equipment.** And it stays **active much longer.**

All Manitowoc equipment is built up to a high standard, designed and constructed to give dependable, long lived service.

Before specifying incinerators, rotary bleaching bailers, digesters, diffuser tanks, disc evaporators, barking drums, refiners, blow pipes, etc., let our engineers prove to your satisfaction that Manitowoc is the **right equipment** for your mill.

MANITOWOC ENGINEERING WORKS, Manitowoc, Wis.

MANITOWOC

into factions and having each put on a number of entertainment stunts mixed with object lessons in safety. The experiment is working out successfully in Kimberly. This mill and the one at Niagara have both operated more than 150 consecutive man-days without incurring an accident.

Hoberg Company to Electrify Plant

The Hoberg Paper Company of Green Bay began the new year with renewed prosperity staring it in the face. A successful year has shown that the reorganization introduced by creditors and directors a year and a half ago was a wholesome one. During that time J. M. Conway has served as general manager.

The company is now preparing to make several improvements including the project to electrify the plant entirely. The sulphite and paper mills are now operated with obsolete steam driven engines. By the change from steam to electric power a saving of 50 to 80 per cent will be effected. The mills are running interruptedly now and have prospects for continued operation all year.

W. M. Gilbert

January 9 marked the passing of a pioneer in the Wisconsin paper industry in the person of W. M. Gilbert, Neenah, president of the Gilbert Paper Company, Menasha. Death was due to heart disease.

He was born July 25, 1852, in Philadelphia. He came to the west in the 70's and with his father started in the wholesale paper business in Chicago. In 1883 he went to Menasha and with George A. Whiting founded the Gilbert-Whiting Paper Company. The partnership was dissolved. Mr. Whiting is still in business on the same site, but Mr. Gilbert organized the Gilbert Paper Company in 1887. His father and three brothers were with him in the enterprise. He was married twice, the first time in 1882 to Priscilla A. Hartsock, of Chicago, who died in 1908, and the second time in 1911 to Mary Felker Cameron, of Oshkosh, who survives him. The funeral was held on January 12. Rites were conducted by the Masonic lodges and by the pastor of the Presbyterian church. His estate was estimated at $200,000 when application for probate of his will was filed.

Albert C. Gilbert, only son of the late W. M. Gilbert, who died early last month, has succeeded to his father's office as president of the Gilbert Paper Company, Menasha. Other officers are: George M. Gilbert and Frank J. Schneller, vice-presidents; Theodore M. Gilbert, treasurer; George D. Barnes, secretary. The foregoing and Fred Huband are the directors.

The Nekoosa-Edwards Paper Co., of Nekoosa and Port Edwards, which won the Safety Cup of THE PAPER INDUSTRY last year, is out this year to make some records in Safety. A three-months' Safety contest between the two mills and enduring for three months ended in a tie at the close of the year. The mills had two accidents each. The contest was for a prize of $1,000. They have started on another inter-mill contest and will compete again for the cup offered by THE PAPER INDUSTRY.

China clay for use in coating paper at Fox River Valley paper mills will be shipped from London to Wisconsin by boat this coming spring. This will be the first direct boat shipment from England to Milwaukee of material to be used in the middle west. About 25,000 tons will be shipped. There have previously been pulpwood shipments by boat from Scandinavian countries to Wisconsin.

Work was started recently on the constructoin of the third digester in the sulphite mill of the Wisconsin Rapids plant of the Consolidated Water Power and Paper Company. The work will take about two months and is expected to increase the sulphite pulp capacity by 50 per cent.

By Process of Elimination

At different points in your plant—substituting modern Ganschow Speed Reducing Equipment for old cumbersome types—you get economy in space, power and maintenance costs—and after years of service you'll find Ganschow Speed Transformers operating smoothly when other types have long since worn out and been replaced.

Hang 'em overhead—any out of the way place, and forget 'em. We submit here a Ganschow type "A" installed above ash pit in a power plant—driving a coal stoker. Here is proof of ability to operate under dirty conditions with a decided saving in floor space.

Catalog No. 111 contains further interesting facts on Speed Reduction. Write for it.

William Ganschow Company
1015 W. Washington Blvd. Chicago

SAN FRANCISCO - - - - The Percy E. Wright Engineering Co. - - - - - - SEATTLE
BIRMINGHAM - C. B. Davis Engineering Co. SALT LAKE CITY - F. C. Richmond Mchy. Co.
BOSTON - - - - - - - Allen & Drew PITTSBURGH - - - - H. S. Stockdale
NEW YORK - - - L. C. Biglow & Co., Inc. PHILADELPHIA - - R. E. Spencer Gears
DETROIT - - - - - F. J. Hudenmiller

Ganschow
SPEED TRANSFORMERS
CUT GEARS · FABROIL NOISELESS PINIONS

Lift Electrically

Why pull, tug, strain and waste your time with slow lifting methods, when the ROEPER TYPE "R" Electric Hoist will do the work twenty times as fast. The price is surprisingly low. Send for Bulletin.

Roeper Crane & Hoist Works, Inc.
1724 N. 10th St., Reading, Pa.

FALLS
TRANSMISSION MACHINERY
Gives Universal Satisfaction

From the Silk Mills of the Orient to the Diamond Mines of South Africa; in Bombay, Baltimore and Buenos Aires; in Timbuktu and Topeka; wherever Power drives machinery you are almost sure to find some member of the Falls family giving consistently good service.

Have the Falls Handbook forwarded today and eliminate your transmission problems for 1926 and the years to come. Ask for Catalog 18-B.

Our engineering department is maintained to serve you without cost.

The Falls Clutch & Machinery Co.
Cuyahoga Falls, Ohio
206-208 Fulton St., NEW YORK 52-58 Purchase St., BOSTON, MASS.

"Cleveland Type" Collar Oiling Bearings

"Smith Type" Hill Friction Clutches

"Industrial Type" Spur Gear Speed Transformers

There's a Reason Why
the Pulp and Paper Mill Industry Use

"Hill Clutch" Mill Equipment

featuring

"Smith Type" Hill Friction Clutches
"Cleveland Type" Collar Oiling Bearings
"Industrial Type" Spur Gear Speed Transformers
"Steelarm" Automatic Belt Tighteners
Agitator Equipment of All Kinds
Flexible Couplings

Your wants mean more to us than "so much material." A careful study is made by Engineering Experts skilled in Power Transmission problems. You receive the accumulated experience of "half a century" serving the Pulp and Paper Mill Industry.

The Hill Clutch Machine & Foundry Co.
Power Transmission Engineers
General Office and Plant
Cleveland, Ohio
New York Office, 41 E. 42nd Street

WEBSTER QUALITY

Steel and Malleable Chains for Pulp and Paper Mills

WHATEVER the type of chain that best meets your own peculiar requirements, Webster has it, and when you have made sure that the chains you employ in your mechanical handling devices bear the —Z— trade-mark of the Webster works, you have gone a long way toward profitable operation in your plant.

Webster chains for mechanical handling devices in pulp and paper mills consists of pintle chain, detachable chain, combination steel and malleable iron chain, riveted and detachable drag chains, and steel pushed roller drive chain.

Our 96-page catalog No. 46, covering our complete line of chains and sprockets, will be forwarded to you on request.

THE WEBSTER MFG. CO.
4500-4560 Cortland Street
CHICAGO

THE JOHNSON FRICTION CLUTCH

Single Clutch with Pulley Mounted

Compact Clutch for Paper Machines

Johnson Clutches are used extensively on paper-making machines. Install the Johnson service; it pays for itself over and over. The Samuel M. Langston Co. has found this to be a fact. So have C. B. Cottrell & Sons Co., the Pusey & Jones Co., F. Wesel Mfg. Co., E. C. Fuller & Co., D. & D. Machine Tool Co., and many other paper machine builders. Splendid performance and years of service mark the Johnson. Engineering service gratis. Equip with Johnsons.

Write for Catalog P. I.

Single Clutch Exterior

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN

Michigan News

Watervliet Stockholders Authorize Expansion Program

To provide funds for the expansion of their paper mill and coating plant in Watervliet, described in the January issue of THE PAPER INDUSTRY, the stockholders of the Watervliet Paper Company have authorized the increase of the capital stock of the company from $820,000 to $1,000,000. This is to be accomplished by the sale of 18,000 shares of common stock, with a par value of $10 each, for $20 a share, the book value of all stock now outstanding. The stockholders further authorized the issuance and sale of $500,000 first mortgage six per cent bonds.

Stock of the Watervliet Paper Company is considered among the most valuable and lucrative of any of the paper mill securities in the Kalamazoo Valley district. For years, under the direction of W. M. Loveland, president and general manager, this stock has increased in value and now pays 12 per cent per annum on the face or par value. Continuance of the same rate of dividends was authorized for 1926, and it was also provided that the new stock, as soon as issued and paid for, will go on a similar dividend basis.

During the last twelve months death has taken two of the oldest directors on the Watervliet Paper Company's board. They are Harrison Geer, Detroit, and W. M. Baldwin, Watervliet. William A. Geer, Detroit, assistant attorney of the Grand Trunk railroad, has been elected to succeed his father and L. B. Anderson, Battle Creek, will take the seat made vacant by the death of Mr. Baldwin. Mr. Anderson is heavily interested in the Kalamazoo Valley paper mills.

The other directors named are: W. M. Loveland, C. B. Hays, August B. Scheid, John A. Pyl, J. B. Balch, Fred Sceid, and R. A. LeRoy, all of Kalamazoo. The officers are: W. M. Loveland, president and general manager; C. B. Hays, vice-president; A. B. Scheid, treasurer; John A. Pyl, assistant treasurer; Frank D. Gilchrist, secretary.

Annual Meetings of Kalamazoo Mills

Hawthorne Paper Company.—F. M. Hodge, president of the Kalamazoo Paper Company, has been elected a director of the Hawthorne Paper Company to succeed A. G. Wightman, who recently went to Watertown, N. Y. This action took place at the annual meeting held Thursday, January 21st. The other directors, all re-elected are: A. H. Dwight, J. H. Dewing, S. B. Monroe, E. W. Chase, C. H. Kleinstuck, Kalamazoo, and W. E. Dwight, Chicago. The officers are: President, A. H. Dwight; vice-president and chairman of the board, C. H. Kleinstuck; vice-president and secretary in charge of production, Fred C. Clark; vice-president and in charge of sales, Horace Gimlin; treasurer, S. B. Monroe.

Rex Paper Company.—Officers and directors of the Rex Paper Company were re-elected at the annual meeting of stockholders. Merrill B. King is president, and other officers are: Harry C. Bradford, Roy V. McCulfor, W. J. Lawrence, Clarence L. Harter, Merrill B. King, Kalamazoo; Harry H. Creamer, Minneapolis; W. G. Irwin, Columbus, Indiana. Directors are: Vice-President Harry H. Creamer; Secretary H. C. Bradford; Treasurer Roy V. McCulfor.

During 1925 the Rex Paper Company erected a fine two-story addition to its plant. The ground floor is used as a finishing and shipping room, with well appointed offices on the second floor. The equipment has also been thoroughly overhauled, bringing the entire plant up to a high state of efficiency. Rex stockholders indorsed support of the Kalamazoo Community Fund and authorized the directors to make such financial contributions as seemed advisable.

"The business outlook for at least the first half of 1926 is as good, and I believe better than that enjoyed during 1925," said Merrill B. King, president of the Rex Paper Company. "We have enjoyed an excellent business during the last 12 months, so you see my predictions are optimistic. We were able to report at our annual meeting the best year of any during the last five years."

Standard Paper Company.—The year 1925 was an excellent one for the Standard Paper Company according to reports

The Lenix Drive

(Trademark Reg.)

180 H. P. Double Header Motors Driving Beaters

"Elimination of Waste" through improved methods of manufacture was the watchword of Industry in the year just past.

For twenty years the Lenix has been eliminating the wasting of power in belt drives caused by slipping belts. The short pulley centers not only possible but preferable with the Lenix result in saving of floor space as in the installation illustrated.

The Lenix is in use in more than sixty paper mills in the United States and Canada. An interesting arrangement of double headed motor-driven beaters which has met with considerable favor in the Paper Industry is described in booklet "The Lenix Drive in the Paper Industry." It may be had on request.

The Lenix is not an idler. It is a "belt wrapper" scientifically applied to belt drives for the purpose of saving floor space, eliminating belt slippage and improving the general capacity of the drive.

Booklets "Saving Slippage and Space" and "The Lenix Drive in the Paper Industry" contain the facts that have induced the sale of thousands of Lenixes and may be had on request.

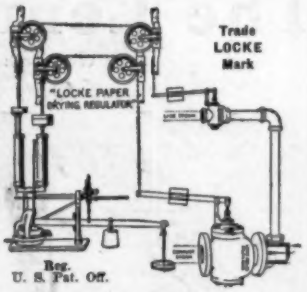
F. L. SMIDTH & CO.

Engineers

50 Church St. **New York, N. Y.**

LOCKE Paper Drying Regulator

This regulator controls both live and exhaust steam for any purpose where steam is used, or it will control the direct steam when used alone. Is unlike, both in construction and operation, any device that has heretofore been designed for this purpose. Controls not only temperature of the dryers when paper is running over them, but maintains the same temperature whenever there is a break in the paper. This machine is most sensitive to any change in temperature of dryers, yet it has been found to be perfectly reliable and what is more, is not continually getting out of order. Also manufacturers of other steam specialties.



Trade LOCKE Mark

Reg. U. S. Pat. Off.

Locke Regulator Co., 76 North St., Salem, Mass.

"Locke" Regulator Agency, 39 Cortlandt Street, N. Y. C.

Canadian Representatives: Peacock Brothers Limited, 1605 Delorimier Ave., Montreal, Can.

MAGIC BOILER PRESERVATIVE

"The Pioneer Boiler Treatment"

Positively removes and prevents scale, stops minor leaks, pitting and corrosion

GARRATT-CALLAHAN CO.

310 South Michigan Avenue, Chicago

148-156 Spear St. San Francisco

MAGIC

ESTABLISHED 1904

1328 Broadway New York City

ECONOMIZERS

Reduce fuel costs by making use of waste exhaust gases to preheat the boiler feed. Patented construction proven by 20 years of service.

FOSTER

SUPERHEATERS

Improve engine, turbine and boiler economy by enabling a given amount of steam to do more work. Over 10,000 installations in stationary power plants.

POWER SPECIALTY COMPANY, 111 BROADWAY, NEW YORK

Boston Pittsburgh Detroit Kansas City Dallas Chicago Denver Los Angeles San Francisco London, Eng.

PRESSURE PIPE THAT NEVER BURSTS
Built in sizes 1 inch to 48 inches

WYCKOFF WOOD PIPE

The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best conveyance for Paper Stock and Acids that can be obtained.

Write today for catalog and prices

A. WYCKOFF & SON COMPANY

1855 Elmira, N. Y., U. S. A. 1925

Technical Association Papers, Series VIII (1925)

In paper, 248 pages. $3 per copy; $1.50 to members of TAPPI

CHEMICAL PULP
- Chemistry in the Soda Pulp Process
- Economy of Lime Reburning
- Evaporator Test Code for Soda Mills
- Preliminary Impregnation of Wood
- Strength Test for Chemical Pulp
- Sulphite Waste Liquor as Fuel
- Use of Decayed Wood for Bleached Chemical Pulp

MECHANICAL OPERATION
- Alexander Electric Paper Drier
- Burning of Wood Refuse
- Moisture Meter and Its Use in Water Removal
- Ruths' Steam Accumulator
- Steam Prime Movers for Paper Mills
- Ventilation of Paper Machine Rooms

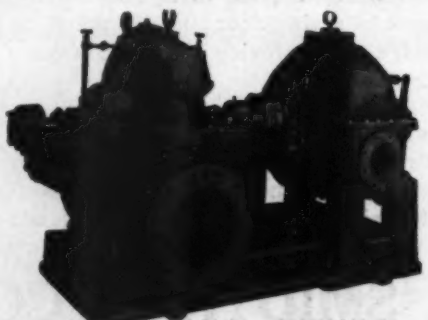
MECHANICAL PULP
- Norton's Segmental Pulpstone
- Refiners for Groundwood Tailings

PAPER TESTING
- Bureau of Standards and the Weller Brittleness Test
- Extractor and Cleaner for Carbon Paper
- Pulp Weight Factors for Microscopical Analysis
- Relation of Paper Furnish to Paper Tests
- Stains for Microscopical Analysis
- Study of the Mullen Tester
- Test for the Liquid Permeability of Paper
- Tests at Various Relative Humidities
- Use of the Glarimeter for Paper Finish

WASTE
- Burning of Wood Refuse
- Economy of Lime Reburning
- Uses of Carbon Recovered from Black Ash
- White Water and Stream Pollution
- White Water Utilization Code

MISCELLANEOUS
- Baryta Paper
- Bibliography of Paper Making for 1924
- Effect of Acetic Acid on Animal Glue
- Notes on China Clay
- Reference Library
- Standard Method for Testing Bags
- Testing Aniline Dyes
- Tendick's Rosin Size Color Test

Write to THE PAPER INDUSTRY, 356 Monadnock Bldg., Chicago, Ill.



"Weinman" Type "LB," Ball Bearing, double suction, centrifugal pump, directly connected to steam turbine, with flexible coupling.

Ball Bearing Pumps

The logical improvement in pump design applied to

Centrifugal Pumps

The progressive papermaker's choice for all mill purposes

The **Weinman** Pump Mfg. Co.

270 Spruce Street Columbus, Ohio

The Weinman Line

- Boiler feed pumps
- Bilge water pumps
- Paper stock pumps
- Lime water pumps
- Hot well pumps
- White water pumps
- Groundwood pumps
- Sulphite pumps

issued at the annual meeting of stockholders. B. C. Dickinson, president of the company, reported that both the carton and mill divisions of the plant are now operating at full capacity with heavy orders booked well in advance and outlook for 1926 equally flattering.

During the last 12 months extensive improvements have been made at the plant. A large steel and concrete warehouse has been erected and equipped with the most approved type of conveyor machinery for handling paper stock. A Dorr Save-All for the reclamation of waste and the purification of white water before passing into the river has been installed. Numerous minor repairs also have been made about the plant and the property is in fine physical condition.

Stockholders voted unanimous indorsement of the Kalamazoo Community fund. The annual election resulted in the following directors being re-elected for the ensuing year: J. F. Byrne, A. L. Clark, E. A. Dunwell, W. J. Lawrence, James H. Dewing, B. C. Dickinson, H. S. Humphrey, and O. H. Stearns. Officers for the ensuing year named are: President, B. C. Dickinson; vice-president, J. H. Dewing; secretary-treasurer, A. L. Clark; assistant secretary, J. T. Bachelder; general manager, J. F. Byrne.

Sutherland Paper Company.—Stockholders of the Sutherland Paper Company authorized the declaration of a 50 per cent stock dividend at the annual meeting. At the same time articles have been filed with the secretary of state announcing the increase in the authorized capital stock from $1,000,000 to $1,500,000.

Of the original authorized capital of $1,000,000, there has been outstanding to date $846,000, with the balance of $152,000 in the company's treasury. A 50 per cent stock dividend on the $846,000 and amounting to $423,000 was declared, bringing the total to $1,269,000. The balance of the stock, $231,000, is to be offered to the present stockholders at $10 par price, or on a basis of about 18 shares for each 100 now held. From this fund of $231,000, outstanding bonds valued at $169,000 and bearing seven per cent interest will be retired March 1. These bonds are callable at par and the legal call has been issued. Under the new arrangement the common stock will have absolute control of the company, with no securities outstanding junior to that issue.

Stockholders further authorized the continuance of the nine per cent dividend on the common stock.

F. W. Sutherland, secretary of the company, reported that business was good during 1925 and the outlook for 1926 excellent.

At the annual election the following directors and officers were all re-elected for the ensuing year: Directors, A. M. Meincke, Chicago; F. M. Hodge, F. B. Eilers, W. L. Otis, E. W. Chase, O. F. Miller, Fred Appledoorn, F. W. Sutherland, L. W. Sutherland; President, L. W. Sutherland; vice-president, O. F. Miller; secretary, F. W. Sutherland; treasurer, W. L. Otis.

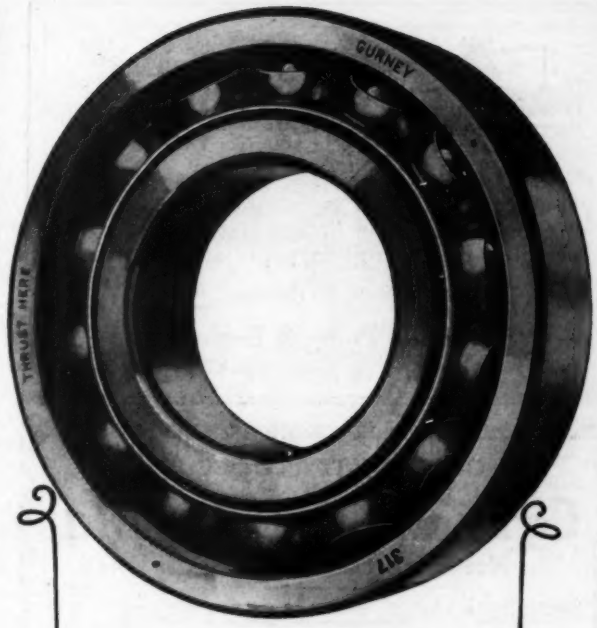
MacSimBar Paper Co.—During 1925 the MacSimBar Paper Company retired a $225,000 bond issue. That was the feature of the report offered at the annual meeting which was held Thursday, January 28th, in the company's offices in Otsego. Business has been very satisfactory during the last 12 months. The new turbine room and equipment is completed and in operation and works to satisfaction.

All directors were re-elected as follows: S. B. Monroe, George D. Cobb, W. E. Kidder, Kalamazoo; Florence G. Bardeen, C. E. Nelson, S. W. Simpson, Otsego; Fred C. Hall, Grand Rapids; E. W. Stone, Allegan; John Vanderveen, Holland, and Wilfred Thompson, Detroit.

The officers are: President, Charles E. Nelson; vice-president, S. W. Simpson; secretary-treasurer, S. B. Monroe; assistant secretary-treasurer, George D. Cobb.

Kalamazoo Vegetable Parchment Co.—W. E. Kidder, president of the Kalamazoo Sled Company, was placed on the board of directors of the Kalamazoo Vegetable Parchment Company, succeeding W. M. Loveland, who has retired to devote all his attention to the expansion program of the Watervliet Paper Company.

Other directors named at the annual meeting are: Jacob Kindleberger, A. B. Connable, W. O. Jones, C. S. Campbell,



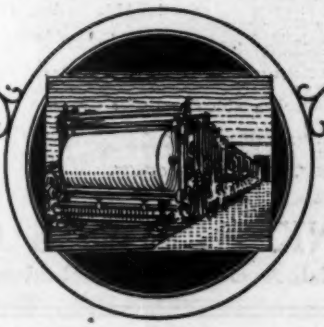
Paper machinery must operate six days out of seven, *continuously;* about 7,000 hours a year, and for many years. The cost of a single interruption in service far exceeds the cost of the bearing which may have caused it. This demand for troubleless service under heavy loads calls for ball bearings of the utmost reliability.

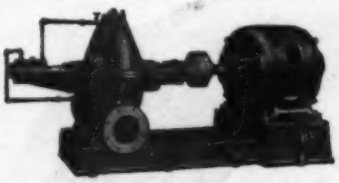
The Gurney Radial type ball bearings have succeeded notably under this severe service, because of their maximum capacity (maximum number of balls), their exceptionally rugged ball retainers, and the high standard of workmanship and material control upon which is built the Gurney reputation for performance.

MARLIN-ROCKWELL CORPORATION
Gurney Ball Bearing Division
JAMESTOWN, N.Y.

GURNEY
BALL BEARINGS

1834S





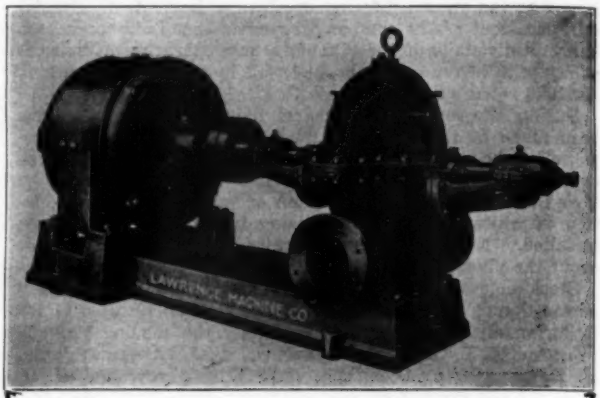
High Efficiency Centrifugal Pumps

We build the latest improved types for every pumping requirement in paper and pulp mills.

Write for Catalog

Lawrence Pump & Engine Co.

P. O. Box 70 LAWRENCE, MASS.



LAWRENCE Centrifugal turbine pump, single stage, horizontally split casing, double suction enclosed impeller, high pressure pumps for water supply service, designed and built in all sizes to meet all conditions. Direct connected to electric motors, steam turbines, gasoline engines, etc. Material and workmanship of the highest class. Please submit to our engineering department your specifications. Prompt service rendered at all times.

LAWRENCE MACHINE COMPANY
LAWRENCE, MASS.

Manufacturer of "Lawrence" Pump, Centrifugal Pumping Machinery, Vertical Steam Engines, Contractors for Special Machinery

OPPORTUNITY TO SECURE

Cylinder Machine Mill

in Northern Ohio at Bargain Price

Exceptional Line of Equipment. 8 Acres Land and Necessary Buildings

INCLUDES

Four Boilers and two Engines and Power Plant Accessories.
Two 1000-lb. Beater Engines, Pumps, Tanks, Jordans and Accessories.
Two-Cylinder Board Machines, Dryers, Calenders, Reels, Winders and Accessories.
Much New Equipment and Stores of Belts and Supplies.
A very little work would start this mill up on chip or container, or will sell equipment.

Box 83, The Paper Industry.

Paper Mill Machinery

PAPER MACHINES
One 118" Fourdrinier. One 84" Fourdrinier.
DRYERS
Seventeen 36"x84". Sixteen 36"x86". Fifteen 28"x62".
CALENDERS
106" nine roll. 84" nine roll. 72" nine roll. 62" seven roll. 64" seven and nine roll.
WINDERS
124" Warren. 122"—102"—72" Moore & White four drum. 82"—72" Langston.
MARSHALL DRIVE
Complete Pusey & Jones drive for paper machine.
SHEET CUTTERS
110 Horne. 84" Clark. 70"—54" Moore & White. 60"—52"—48" Hamblet.
REAM CUTTERS
54" Holyoke Seybold. One 44". One 38". One Twentieth Century Seybold.
LAYBOYS
102". Four 52" Erie single.
Variable speed steam engine ERIE BALL 12x12x14 Revolvator.
Four 72" Sandy Hill wet machines.
Two shredders, MITTS MERRILL No. 17.
SUPER CALENDERS
56"seven roll Holyoke. Four 66" Holyoke. One 45" Norwood.
SUCTION ROLLS
104"—126" Millspaugh with Connersville pumps.
STUFF PUMPS
Six Deane triplex 12x12.
BEATERS
2 Jones 56"x57". One Holyoke 60"x60".

For sale by

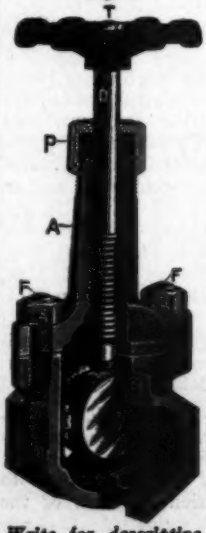
FRANK H. DAVIS CO.

175 Richdale Ave. Cambridge, Mass.

POWELL VALVES

"Pilot" Gate Valves

Fig. 460



Write for descriptive Circular

All iron or iron body with steam bronze trimmings. Simple in construction.

Working Pressure up to 125 lbs.

Economical and Reliable

Avoid disappointment in Valve Service by specifying POWELL VALVES

The Wm. Powell Co.

214 Draper St.
Cincinnati, Ohio

C. H. Stearns, W. J. Lawrence, A. B. Read and Frank Mosteller. All officers were re-elected: President, Jacob Kindleberger, R. H. Hayward, general manager; Frank Mosteller, vice president; C. S. Campbell, treasurer; Thomas W. Peck, secretary.

Superintendents to Meet

The Michigan Division of the American Pulp and Paper Mill Superintendents will hold their next meeting at the Park-American Hotel Thursday evening, February 18th. At this meeting L. M. Mongreig, of the United States Rubber Co. will give a talk on rubber covered rolls.

Alfred Bryant is secretary of the Michigan Division. He is lining up some very good speakers for their meeting, and the association now boasts of a mailing list of 75.

The Wagner Stationary Recovery Furnace

In the installment of **Observations of a Traveler**, published in the January issue of THE PAPER INDUSTRY, there occurs one of those proverbial perversities of inanimate things that often vex the heart of an editor and contribute to the early grayness of his locks. At the top of page 1594 the heading over a column description of the Wagner Stationary Recovery Furnace, the invention of C. L. Wagner, of the J. O. Ross Engineering Corporation, was erroneously printed "Warren Stationary Recovery Furnace." While Mr. Wagner was naturally put out by the inadvertent error he was at the same time astonished to get a large number of inquiries concerning the furnace. He asks for a correction of some kind and we are glad to make it in this way, with the hope that he may get a further large crop of inquiries.

WANTED—First-class millwright for Sulphite Mill in British Columbia. Only competent man need apply. State salary and experience in first letter. Box 84, The Paper Industry. Adv.

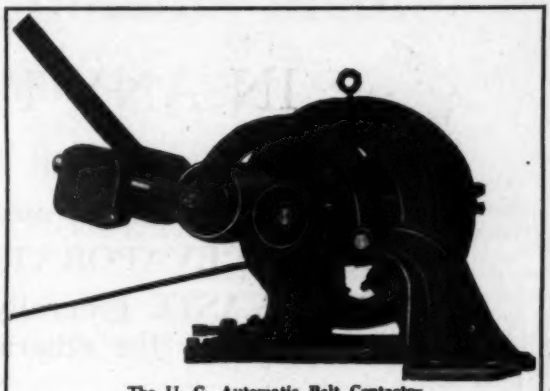
Experienced Laboratory Chemist Wanted

For chemical, microscopical and physical testing of paper. Must be thoroughly educated in paper making from both a theoretical and practical standpoint. Working conditions ideal. Laboratory up-to-date. Good future to right man. Write Paper Laboratories Incorporated, 1700 Prairie Ave., Chicago.

FOR SALE—New modern paper mill. No equipment, ideal location. Will sell entire property for less than cost of new buildings. Write for information. Owners—THE JOHN W. COWPER COMPANY, INC., FIDELITY BUILDING, BUFFALO, N. Y.

WANTED: FINISHING ROOM FOREMAN FOR MODERN MILL MAKING BOOK, BONDS, LEDGERS. DESIRABLE LOCATION. SEND COPIES OF REFERENCES, DETAILED STATEMENT OF EXPERIENCE AND EXPRESSION OF SALARY DESIRED WITH LETTER. ANSWER QUICK—BOX 82, THE PAPER INDUSTRY.

Steel Plate Construction
Steel Storage Tanks, Blast Furnaces, Gas Holders
Steel River Barges and Plate Work of all Kinds
Steel Transmission Towers
RITER-CONLEY COMPANY
General Offices, Pittsburgh, Pa.



The U. G. Automatic Belt Contactor

Saving Space, Belts and Money

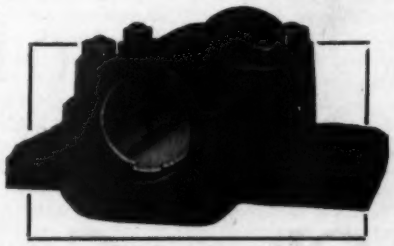
HERE'S a sturdy little power transmission unit that has great economical features. It saves Belts, Bearings, Floor Space, Motors, Power—and trouble.

It automatically wraps the belt around the pulley, increasing the arc of contact as load increases, thus giving more power.

The U. G. Automatic Belt Contactor is potent with possibilities of savings and increased production efficiency in your plant. We'd be glad to send you a circular describing this profit-making appliance.

For 69 years T. B. Wood's Sons Company has been manufacturing a complete line of quality products for the mechanical transmission of power. Each and every one of them is of that durable, long-wearing quality that makes for economy.

When you next consider power transmission appliances consult the Woods Dealer.



T. B. Wood's Sons Co.

Makers of Power Transmission Machinery Since 1857

New England Branch, Cambridge, Mass.
Southern Office, Greenville, S. C.

IN ANY PAPER MILL

SPACE means money

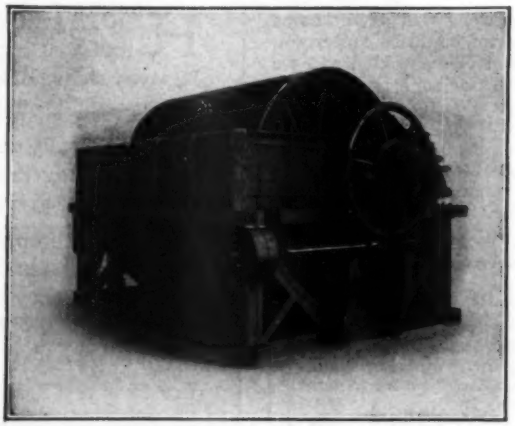
LABOR means more money

STEAM for EVAPORATION means still more money

STOCK WASTE generally means more money than all the others put together

These can be greatly reduced by the use of

OLIVERS



White Water Waste Recovery, Soda and Kraft Pulp Washing, Thickening before Bleach, Washing after Bleach, Deckering and Lime Mud Washing are all being successfully and economically accomplished on

OLIVERS

It is easy to **say** this in print but **see** OLIVERS operating in many mills and satisfy yourself.

Oliver Continuous Filter Co.

San Francisco
802 Cunard Building

New York
1422 Aeolian Building

London
11 Southampton Row

Johannesburg, South Africa
E. L. Bateman, The Corner House

See page 390 in the 1925 Paper and Pulp Mill Catalogue

Technical Developments in the Paper Industry

Domestic and Foreign

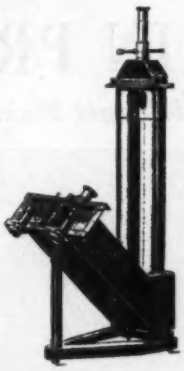
The following abstracts are of the latest developments found in the foreign press and the domestic and foreign patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

Cellulose, Etc., from Banana Stems

BANANA stems are boiled, preferably after crushing, for a period of three to four hours at atmospheric pressure with dilute solution of sodium hydroxide which is preferably of half normal concentration. The stems may with advantage undergo mechanical disintegration during the digestion process. The alkaline liquor is then withdrawn, treated with calcium chloride to precipitate the coloring matter, the resin, etc., and is then causticized by boiling with lime and is then used over again. Potassium salts gradually accumulate in the liquor and when sufficiently concentrated may be recovered. The boiled fiber is washed and exposed for one to one and one-half hours to the action of a dilute solution of bleaching powder. The bleached products may be used for paper making or as a surgical absorbent or in the manufacture of artificial silk. British Patent, No. 238,659.

Measuring Tendency of Fillers to Produce Turbidity

EVERY technical paper man knows that of two otherwise entirely similar kaolins, the one that possesses the faculty of forming turbid solutions with greater ease is the one that will be better suited for the manufacture of paper. The paper chemists have assigned this difference to the different colloidal condition of the kaolin in the solvent medium. Then it is by no means immaterial whether the tubidity test is made in water or in oils.



The technical paper man is eager to learn of a process or method by which it is possible to determine the degree of turbidity of a kaolin as rapidly and as accurately as possible. This applies as well to other fillers such as talc, asbestine, gypsum, chalk and the like. While it may be true that it does not matter much from a practical standpoint whether one kaolin is apt to form turbid solutions any more easily than another, nevertheless, as far as saving of material is concerned, there is quite a great difference.

Hence in the article which is published in Zellstoff un Papier, 1925, pages 481-2, there is described a rapid method for the determination of the turbidity propensities of fillers which is very suitable for practical operation and which has not yet been described in technical literature.

The apparatus which is used for this purpose is shown in the figure and is a half shadow photometer. (The Olszewski-Rosenmueller type.) The turbidity of solutions or rather suspensions is determined by optical comparison with a column of equal height of absolutely clean water. Two separate rays of light which can be changed in any measurable manner independently of each other are made to course through the columns of liquid. After these beams of light have passed through, the solutions are made to be reflected from a "normal white" surface and after such reflection they are compared optically in a photometer.

The beams of light that course through the columns of liquid can be changed at will by proper manipulation of the double slit which is provided in the apparatus so that both halves of the object appear equally as bright.

The ratio of the width of the slit, which can be measured by means of a suitable scale and vernier with an accuracy of one-twentieth of a millimeter gives then the degree of the turbidity. Color filters are employed in order to negate the effect of the color of the filler on the turbidity determination.

In order that accurate results be obtained by this method, it is necessary that other comparative samples be kept in a drying chamber for a long time at a temperature of 100 degrees C. The fillers must be in a very finely divided state. A definite weight, one gram, of each sample is then taken and mixed with an accurately measured out amount (fifty cubic centimeters) of distilled water in a beaker until a uniform suspension is obtained. It is absolutely necessary that this operation be carried out at the same temperature for all the samples.

The first suspension is then diluted with a corresponding amount of water, one thousand cubic centimeters, and the degree to which the suspension deposits a sediment is tested out in a burette. The dilution of the sample is then continued until there is no longer a deposition of sediment within a period of ten minutes. It is only when this condition is attained that the tube of the Olszewski-Rosenmueller apparatus is filled with the sample and the latter subjected to photometric measurement. The results that are obtained with the aid of his instrument are then arranged in tabular form and are later compared with one another. The designation "normal white" is taken to be that white which is possessed by a calcined magnesia, which is sprinkled over a mat gypsum plate. Such a surface is then "normal white" and "lusterless."

It is of course possible for each mill to select its own standard in this regard, but then it follows that the results obtained by one mill cannot be compared with those obtained by another.

Lignin Substances

METHODS for separating lignin from the other constituents of wood are discussed in the article that is published in Brennstoffchemie, 1925, volume 6, pages 117-125, 158-162, 177-180, 88-94, 208, 304-311. In order to obtain lignin which is free from cellulose and with as little decomposition as possible, the following modification of Willstaetter's process is employed. Spruce shavings which are preferably freed from resins and fats by extraction for several hours with a mixture of alcohol and benzene, are shaken for fifteen minutes with ten times their weight of fuming hydrochloric acid, density 1.222. The mixture is then poured into excess of hot water, thoroughly stirred, and immediately diluted with a large excess of cold water. The lignin settles first on allowing to stand, and the lighter and more finely dispersed cellulose precipitate is separated from it by decantation, followed by filtration through muslin. The residue is extracted twice with fuming hydrochloric acid, shaking for ten minutes each time with five and then two and one-half times its weight of acid, and finally washed with water and dried.

The product is free from cellulose. It forms a light yellow colorless powder. Analysis of two samples gave carbon 58.73 per cent and 58.81 per cent, hydrogen 6.85 per cent and 6.98 per cent. The methoxy content was 5.47 per cent and 5.61 per cent, and the average ash content was 0.30 per cent. The lignin which is prepared in this manner is only very slightly soluble in boiling phenol, and in general is resistant to the action of solvents. It dissolves at once, however, in trichloroacetic acid, giving a violet brown solution, from which it is reprecitated by pouring into excess of water, in a form which is soluble in alkalies, acetone, etc.

Lignin is regarded as a collodial coniferin complex, with some free coniferin absorbed on its surface. The elementary composition and methoxy content of lignin isolated by the author's method are in accord with this hypothesis when account is taken of the unavoidable hydrolysis which occurs dur-

PERKINS

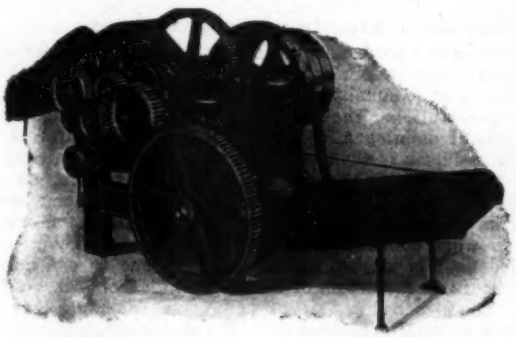
See page 391 in the 1925 Paper and Pulp Mill Catalogue

A Big Saving for Paper Mills

in Waste
in Power Cost
in Payroll Expense

SPECIAL ADVANTAGES OF
THE PERKINS RAG AND STOCK CUTTER

Large capacity.
Maximum efficiency in operation.
Minimum power consumption.
Dustless operation.
Cuts the stock both ways.
Clean shear-cut.
No waste of stock.
Less time in the beaters.



WRITE DEPT. M
B. F. PERKINS & SON, Inc., Holyoke, Mass.
MANUFACTURERS

The Perkins Rag & Stock Cutter

BARRE GRANITE IN PRESS ROLLS

Is Revolutionizing the Whole Paper Making Industry

If your Paper Machines are not equipped with Press Rolls of BARRE GRANITE you are not getting the results that you should get, for it is a recognized fact that granite rolls are much superior to any others and Barre Granite the best of all. Let us tell you about them.

Jones Brothers Company

BARRE, VT. **BOSTON, MASS.**

ing the treatment with fuming hydrochloric acid. The hypothesis is further confirmed by a comparison of the action of various reagents, such as trichloro-acetic acid, sulphite solution, fused potash, etc., on lignin and coniferin respectively; by the presence of sugars in lignin, and by the widespread occurrence of coniferin in lignified tissues, and the presence of its decomposition products in the tar and liquor from wood distillation.

Paper and Board Drier

IN FRENCH Patent, No. 577,836, there is described an improvement in the design and construction of dryers which are used in the drying of paper, cardboard and other materials which are found in the sheet or thin layer form.

In the dryers which have been used up to the present time, pockets of moist air are formed between the dryer cylinders, the paper web which is being dried and the felts. These pockets of moist air and vapor prevent the escape of the moisture

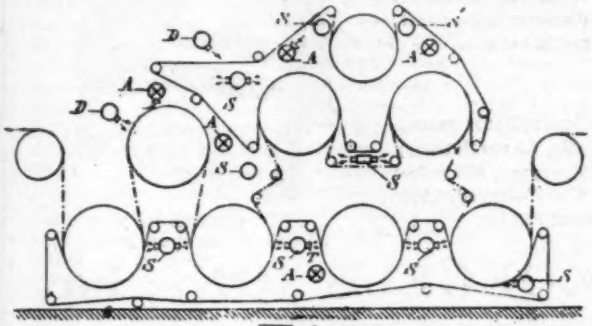
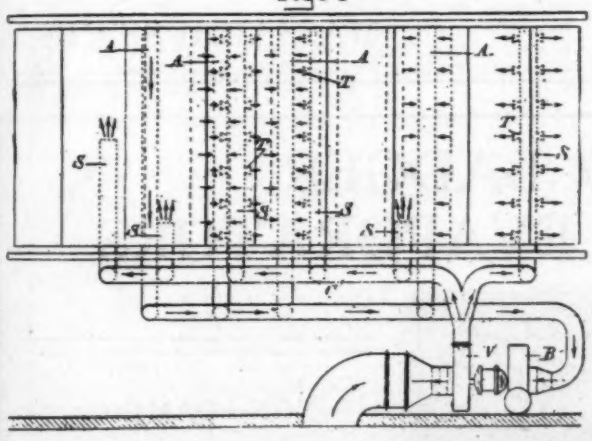


Fig. 4



laden air and the result is that it is impossible to effect rapid drying under these conditions. Then again the drying process becomes irregular. The present invention has been made for the purpose of counteracting these difficulties.

Referring to the figure, it is seen that (V) is a fan which blows the warm air into a collector (C). This fan can be arranged in such a manner that it either sucks or blows the air into the collector (C), through a battery of heating devices, air condensers, air reheaters or other suitable apparatus which can be used for this purpose. Various branch pipes (S) and a number of regulatable openings (T) serve to introduce the hot air into the pockets that are formed by the paper web, the cylinders and at certain places by the felts.

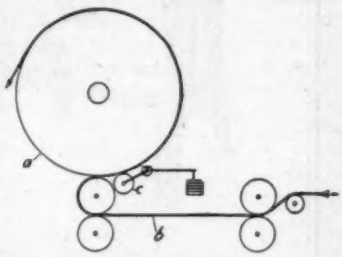
The pipes (S) extend along the entire length of the cylinders and are made in such a manner that they can be placed at any suitable angle with the latter. They can be mounted outside of the pockets, above the felts, as seen at (D).

A number of suction conduits (A) are also arranged in the apparatus. These are made so that they can be moved about and are furnished with openings which are placed in the pockets of moist air above the felts and the cylinders. The pipes (A) are connected in suitable manner with a suction pump (B).

Manufacture of Straw Paper

IN GERMAN Patent, No. 418,924, there is described a process for the manufacture of a paper from straw stock which is perfectly smooth on both sides and free from rough spots and undisintegrated fibers.

Up to the present time it has been customary to treat the straw, used in the paper making process, in a rotating digester with the addition of caustic lime for a short time, from one to two hours, and at ordinary temperature, from three to four atmospheres. The mass that was obtained in this manner was then transferred to the kollergang and beater and finally reached the paper making machine, in which the paper web which was made on the Fourdrinier wire was then led over heated drying cylinders. However, this process rendered it possible to manufacture the variety of straw paper which was smooth only on one side, while the other side which was in contact with the drying cylinders was rough and coarse-looking, and full of numerous aggregations of partially decomposed fibers and unevenness of all sorts. Hence the process as described above was suited only for the manufacture of papers which did not have to have a prepossessing appearance, such as wrapping papers, and the like.



The process which is the subject of the aforementioned patent has for its purpose the manufacture of a paper from straw stock, which is so smooth on both sides that it is possible to use it as a backing for photographic papers.

In accordance with the new process, straw stock which has been cut up into small pieces is digested in a rotating digester for a comparatively long period of time, from three to four hours, at a very slight pressure, approximately one atmosphere. This treatment results in the softening up of the fibers without necessarily subjecting them to any deep-lying decomposition. The digested mass is then treated in the customary manner.

After treatment in the kollergang and the beater the stock is put through a refining engine and in that apparatus it is disintegrated to form a very fine mass of fibers. Then it is ready for conversion into a paper web on the paper making machine. The digestion of the straw stock under the aforementioned conditions of time and pressure results in the production of a pulp which is free from all knotty aggregations of fibers. However, it must be remembered that the preliminary treatment is only a step in the process and in order to obtain a straw paper which is perfectly smooth and even on both sides, it is necessary to process the paper further after it has been dried on the paper making machine. The paper must be pressed.

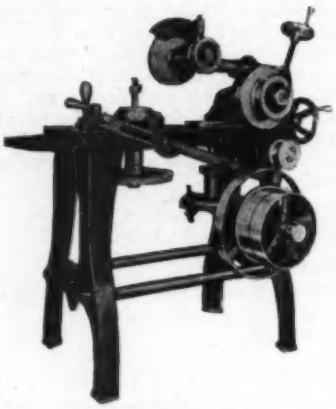
The apparatus that is employed for this purpose can be seen in the accompanying illustration. The drying cylinder is shown at (a) and in contact with this cylinder there is an iron roll (c) which presses up against the paper web while it is still in the moist condition.

Effect of Water on Paper Fiber

THE function of the water in the manufacture of paper is not merely mechanical as a suspension medium but also physico-chemical as a swelling agent. The operation of beating effects the subdivision of the fiber both transversely and longitudinally, but it also assists the penetration of water into the cellulose colloid, where it is retained after draining and pressing on the paper machine. Such colloidally held water is only eliminated by evaporation on the drying cylinders, and the fiber, being softened by the presence of water in their substance, are deprived of their resilience. Such hydrated fibers dry with considerable shrinkage to form a dense hard sheet of paper.

Experiments were carried out with unbeaten half stuff and fully beaten pulp of the same composition. Known weights of these pulps were drained and compressed in a cylinder with gradual pressure up to seventy kilograms per

Most Every Paper Mill Has Koegel Equipment



THE STANDARD
Capacity—8½-inch Diam. Slitters

Specifications: Floor space, 27"x 42"; speed of spindle, 55 revolutions; driving pulley, 9"x2½"—speed, 400 revolutions; emery wheel, 7"x½"—speed, 3,000 revolutions; weight, about 425 lbs.

Over 800

Standard Koegel Patent Universal Slitter and Circular Knife Grinders are in the paper and pulp mills of the United States and Canada. What greater evidence could be offered for the universal service this grinder renders?

For Greater Capacity

The Koegel No. 4 Patent Universal Slitter and Circular Knife Grinder is built for Slitters up to 16" in diameter. In mills where larger diameter knives and slitters are used, 150 are in service.

Here are the specifications: Floor space, 32"x52"; speed of spindle, 55 revolutions; driving pulley, 10"x2½"—speed, 400 revolutions; emery wheel, 8"x½"—speed, 3,000 revolutions; weight, about 525 lbs.

THE KOEGEL No. 4
Capacity—16-inch Diam. Slitters

CHAS. KOEGEL'S SONS, Inc.

Slitters and Specialties

HOLYOKE MASSACHUSETTS

IMPROVED BADGER BLACK LIQUOR EVAPORATORS

Recent Installation
NORTHWEST
PAPER CO.
Cloquet, Minn.

NON-FOAMING

MAXIMUM
STEAM ECONOMY

NO ENTRAINMENT

SODA and
SULPHATE
PROCESSES

E. B. BADGER & SONS CO., Boston, U. S. A.

See page 316 in the 1925 Paper and Pulp Mill Catalogue

square centimeter. The cakes were weighed, dried and measured, the measured volumes being compared with the calculated volumes. In the case of the half stuffs, the fibers being stiff and resilient, the measured volumes were greater than the calculated, showing an expansion after release of the pressure. In the case of the beaten pulps, the measured volumes were smaller than the calculated, and it appears that the cellulose had become so plastic that a contraction occurred under pressure, and the density of the paper had increased from 1.5 to 1.6. The longer the duration of the pressure the smaller was the difference between the measured and calculated quantity of the colloidal hydration water under the prolonged action of the pressure. Der Papierfabrikant.

Ionic Reactions in the Sulphite Cellulose Process

IN THE article which is published in Svensk Pappers-Tidning, 81, 1925, is contained a discussion of the various chemical reactions that take place during the sulphite digestion of wood pulp from the electrolytic disassociation standpoint. The rapidity of the processes which have as their results the decomposition and disintegration of the lignin depends apparently not only on the concentration of the HSO_3 ions, but also to a considerable degree or the concentration of the hydrogen ions. Furthermore, the concentration of the calcium ions in the digestion liquor is of considerable importance in determining the rapidity with which the digestion of the pulp is effected. This latter concentration increases as the digestion progresses in ratio to the concentrations of other ions present in the liquor, and acts as a buffer against the effect of the hydrogen ions. The lime does not neutralize the lignosulphonic acid that is formed in the digestion but is only in equilibrium with the latter.

Artificial Parchment Paper

A NEW process for the manufacture of substitutes which can be used in the place of true parchment paper, and for the manufacture of cardboard and other papers which are impervious to fatty and greasy substances is patented in German Patent, No. 418,720.

It has been observed in this new process that the paper web which is made from slow beaten stock is formed much more easily when the web is not carried over as is usual directly to the couch roll, but when the webs are pressed together and united to form a single thickness of paper in a wet press which is an additional part of the paper making machine. A particularly intimate union of the various webbs to form the single sheet of paper or cardboard is obtained when one paper web is freed from its water content to a greater degree than the other, for when the two webs are then placed together and dried still further, then in the effort of the water to escape through the paper structure the fibers are knited together more effectively.

It is possible to manufacture according to this process a grade or paper which possesses parchment like characteristics and which can be used in the place of real parchment.

The apparatus which is used in this process is shown in the accompanying illustration. There are two cylinder wires (a) and (a') and also a longitudinal wire (b) which acts as a top-wire. For example, if it is desired to make a cardboard with this installation, which is impervious to fats, the following procedure is carried out.

A paper web is manufactured on the cylinder wires (a) and (a') in the usual manner from the usual grade of paper stock. This web is passed through the couch roll (c) and the press (d) for the purpose of removing the water contained in it. At the same time a second paper web is being manufactured on the Fourdrinier wire which is located over the cylinder wires. The top web forms the fat-impervious, parchmentized layer, and this is also led through the couch roll (e) and the press (f). Then the web is led down to the lower portion of the apparatus so that it can be united with the paper web which was made on the cylinder wires (a) and (a'). The union of the two webs takes place at the point (g) and the two together are led through the wet press (h). For the reason which has been mentioned above, the lower paper web has been subjected to a somewhat greater dehydration than the upper paper web. It is very easy to make a cardboard which is impervious to fatty substances of any desirable thickness by means of this apparatus.

Fiber Board

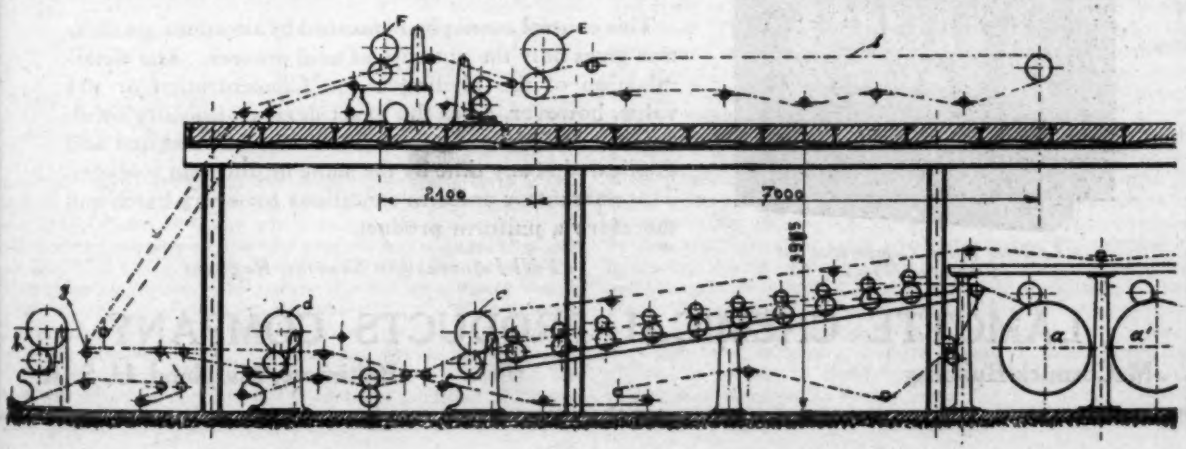
A PROCESS for the manufacture of a composition fiber board is patented in United States Patents, Nos. 1,566,309 and 1,556,310. In these patents the method of producing a dry moldable material is described. This consists in beating out the cellulose in the presence of animal matter and water until the cellulose is hydrated to the point of sliminess and making the fiber board from this material. The stock is sheeted on a paper making machine and then dried, and thereafter sheets of the paper are subjected to heat and to high pressure, upwards to 2,500 pounds per square inch.

Regenerating Sulphuric Acid from Parchment Paper Making

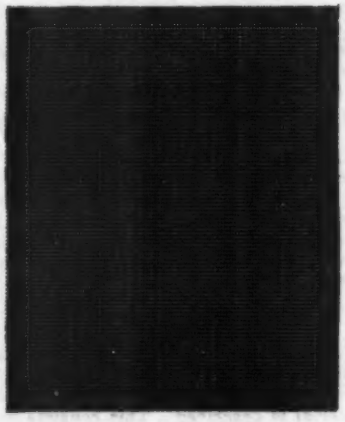
IN GERMAN Patent, No. 418,831, there is described a process for the regeneration of the sulphuric acid that is contained in the waste liquors that are recovered from the process of making parchment paper.

It has been found that the liquors which have been put through the purification treatment can be used again in the manufacture of more parchment paper when the dilution of the acid in the liquor is reduced to such a point by concentration that the liquor has the proper acid content to be employed in parchmentizing paper. But when this concentration is effected in the ordinary manner, it has been found that the liquor becomes contaminated with decomposition products that are formed by the reactions taking place between the concentrating acid and the organic substances present in the liquor, with the result that the concentrated liquor is colored a deep brown to a black.

It is possible to remove the colored substances from the liquors by the aid of solid absorbents, and in this way it is possible finally to obtain in a liquor which is perfectly water-white or at least a slight yellowish in color and which nevertheless contains the correct amount of sulphuric acid to be employed in the parchmentization of paper. As adsorbents



No Grooved Suction Boxes



CABBLE Superior Fourdrinier Wires are perfectly smooth and even in mesh and will not cut grooves in the suction boxes.

Their toughness and strength enable them to stand up under extremely severe duty. Long and efficient service are synonymous with Superior Fourdrinier Wires.

Farsighted mill owners and Superintendents have learned to place explicit confidence in Cabble Superior Fourdrinier Wires, as evidenced by their use in hundreds of paper mills throughout the United States.

The paper industry has realized that our over three-quarters of a century in manufacturing wire products amply qualify us to meet their requirements.

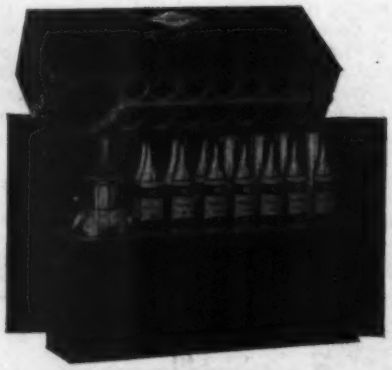
We also make cylinder faces of standard mesh in phosphor bronze or brass of the highest quality.

The WM. CABBLE
Excelsior Wire Mfg. Co.

80-88 Ainslie Street Brooklyn

Does the Saving of $1,000 to $10,000 a Month Interest You?

This can be accomplished by the use of our LaMotte H-Ion Comparator Set



LaMotte H-Ion Comparator Set (Improved Model)

Recent work has shown that accurate control of acidity within narrow limits is of extreme importance in the manufacture of paper, the best results in the sizing, tinting and filling processes and the formation of paper on the machine, being dependent on this factor.

This control cannot be measured by titrations, as titration gives only the quantity of acid present. The determination of the Hydrogen Ion Concentration or pH value, however, gives the exact *degree of acidity* or alkalinity in definite figures, which can be recorded and duplicated at any time by the same or different workers. This guarantees uniform conditions for every batch and therefore a uniform product.

Full Information Sent on Request

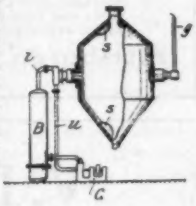
LAMOTTE CHEMICAL PRODUCTS COMPANY

McCormick Building Baltimore, Maryland, U. S. A.

for this purpose the following have been particularly indicated as giving good results: Clay, Fuller's earth, bleaching earths, silica, silicates, carbon or various mixtures of these materials. Of the various adsorbents that are generally used for like purposes but which have been found not to possess a sufficiently high enough degree of absorption to be employed for this purpose are the various varieties of carbon such as wood charcoal.

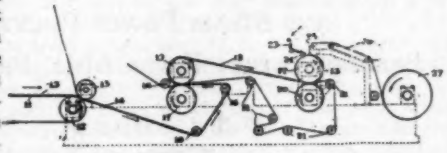
Digesting Pulp in Rotary Digesters

THE illustration shows a type of rotary digester. It is seen that the digester is provided with pipes (g) and (l) for the entrance and the removal of the digesting liquor. The pipe (l) is also seen connected with pipes (S) within the digester which end at opposite ends of the digester, opening out in sort of spraying devices. The entrance and exit pipes are arranged within the hollow trunnions of the digester. The heater (B) which is located outside of the digester is for the purpose of raising the temperature of the digestion liquor to the proper point before it enters the digester. The process and apparatus are patented in United States Patent, No. 1,566,339.



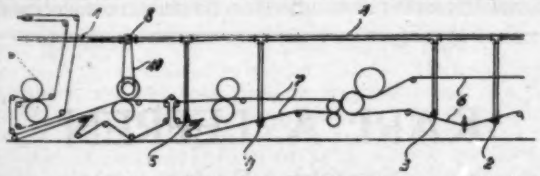
Paper Making Machine

THE paper making machine which is patented in United States Patent, No. 1,568,363, and which is shown in the accompanying illustration is characterized as follows: It is composed in the first place of an endless wire which travels around a suction roll. There are also contained in the machine a couch roll, a primary press and secondary press. A primary felt is provided between the couch roll and the primary press, the felt being adapted to contact with the wire at the couch roll and to pick up the paper that is formed on the wire. Means are provided for guiding the primary felt. A secondary felt is provided between the primary and secondary presses which is adapted to contact with the primary felt at the primary press and to pick up the paper sheet directly from the primary press. Means are provided for guiding the secondary felt between the primary and secondary presses and means are located at the secondary press for creping the paper. There is a drying roll and an endless conveyor is located between the creping device and the drying roll to support the paper at this part of the machine.



Cleansing the Wire and the Felt in Paper Machines

THE cleansing of the wire and the felt in the Fourdrinier machine is generally accomplished by means of spray nozzles through which water is sprayed on to free felt. Inasmuch as the feed of water to these nozzles is constantly at the same pressure throughout the washing process, it is found that in a continuous washing process there is frequently a very large waste of water which is entirely unnecessary.



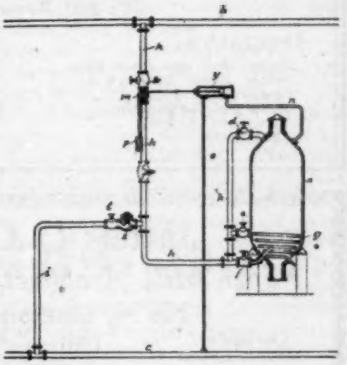
Hence the purpose of the new process and apparatus which are described in German Patent, No. 420,831, illustrated in the accompanying figure, is to reduce the consumption of water in the washing process to a point where the minimum amount of water is used compatible with good results. This reduces the costs involved in the operation and avoids the necessity of reusing large volumes of water that has performed its washing action on the felt which contains particles of fibers.

In carrying out this idea, the felt is washed in an automatic manner, and the pressure of the stream of water that is played on it is regulated so as to bear some definite and economical and effective relation to the rate at which the felt is moving past the spray nozzles. Thus when the felt stops moving, the water will simultaneously stop flowing. Hence, the water inlet pipe is connected in a suitable manner with the driving arrangement which moves the felt. Or else the regulation of the water is effected in such a manner that the flow of water is allowed to continue through the spray nozzles for a definite length of time and then it is interrupted for another definite period of time. It is important that the water pressure remain constant during the time that the felt is being washed.

The figure shows part of a paper making machine in diagrammatic form. The water inlet pipe is seen at (1) and the spray pipes at (2), (3), (4) and (5). From these pipes water is sprayed on to the wire (6) and the felt (7). The valve (8) on the water inlet pipe is connected with a pulley which is driven by the belt (10) and which rests on the felt (7) and another idler which is placed underneath the latter. Thus it is evident that the faster the travel of the felt the greater will the valve (8) be opened and the more water will flow through the spray nozzles. When the felt stops moving, then the valve will be closed. It is also possible to insert the regulators in all the pipes (2) to (5) which are then actuated independently of one another.

Digester Arrangement

THE accompanying illustration shows an arrangement of digester in which a number of steam feed conduits are arranged so as to eliminate the troubles encountered in feeding steam to this sort of apparatus. In the first place, there is a high pressure conduit which is adapted to supply steam to the digester, and there is also a low pressure conduit which is employed for the same purpose. Automatic means are provided for controlling the flow of steam from the high pressure conduit to the digester so that the flow of steam is responsive to conditions in the digester and conditions in the low pressure conduit, United States Patent, No. 1,568,420.



Pulverized Substances from Sulphite Waste Liquor

IN ORDER to make a pulverized product which always remains in the powder form and which is nevertheless soluble in water and does not fall to pieces when exposed to the air, the waste sulphite liquor is treated in the following manner. In the first place the liquor is freed from its iron and lime salts, and thereafter it is heated with an excess of alkali. Then the excess of alkali is neutralized by the addition of acid, and then the solid ingredients of the liquor are precipitated out of it by concentration of the liquor or by salting-out with the aid of sodium chloride, or else both means may be employed in bringing this about.

For example, 250 parts of a sulphite cellulose waste liquor which is free from iron and lime salts of about 30 degrees Be. concentration are heated for some time with 62 parts of a 38 degrees Be. solution of sodium hydroxide at a temperature of approximately 100 degrees C. Then the alkali is neutralized by the addition of 56 parts of a 20 degrees Be. solution of hydrochloric acid. Then 40 parts of sodium chloride are added and the mixture is heated up strongly until precipitation takes place. The solid substances which are obtained in this fashion are then dried in a vacuum dryer. The product has a yellow-brownish color, is soluble with great ease in water and when allowed to remain in contact with the air for an indefinite period does not lose its form.

For further details see German Patent, No. 419,224.

D. Manson Sutherland, Jr.
Consulting Chemical Engineer
Special Fibre Products and Processes
Homogeneous Boards
Waterproofing Compositions
Purification of Effluents
Forming and Drying Machines
Utilization of Waste Fibres
Broad Street Bank Building
TRENTON, N. J.

H. S. TAYLOR, Consulting Engineer
Member Am. Soc. C. E.—Am. Soc. M. E.—Eng. Inst., Can.
PULP, PAPER AND FIBRE MILLS
HYDRO-ELECTRIC AND STEAM POWER PLANTS
PLANS—SPECIFICATIONS—EVALUATIONS—REPORTS—CONSULTATIONS
Jefferson St. Arcade, Dayton, O. Guarantee Bldg., Montreal, P. Q.

C. C. HOCKLEY
Consulting Engineer
Paper & Pulp Mills
Power Plants
Industrial Reports
Appraisals
Northwestern Bank Building
PORTLAND, OREGON

POWER PLANT PIPING
We are fully equipped to supply fabricated materials and to install complete piping systems for Electric Power Stations, Blast Furnaces, Steel Mills, Coke Works, Paper Mills and Industrial Plants of every description—backed by an experience of almost a quarter century.
Pittsburgh Piping & Equipment Co.
PITTSBURGH, PA.

GEORGE F. HARDY
M. AM. SOC. C. E.
M. AM. SOC. M. E.
M. ENG. INST. CAN.
Mill Architect and Consulting Engineer
Langdon Building
305-309 Broadway, New York
SPECIALTY:
Paper, Pulp and Fibre Mills
Water Power Development
Steam Power Plants
Plans and Specifications
Valuations, Reports
Consultation
Cable Address: "Hardistock"
A. B. C. 5th Edition
Bedford McNeill
Western Union
Bentley's

V. D. SIMONS
Industrial Engineer
PULP AND PAPER MILLS, HYDRO-ELECTRIC AND STEAM POWER PLANTS
ELECTRIFICATION PAPER MILL PROPERTIES
39 S. LA SALLE ST.
CHICAGO

James L. Carey
Paper Mill Architect and Engineer
208 N. Laramie Ave.,
Chicago
Cable Address: JASCAR, Chicago
Codes ABC 5th, Western Union

J. H. WALLACE & COMPANY.
TEMPLE COURT BUILDING
NEW YORK CITY, U.S.A.
CABLES. TRIPLEX, N.Y.
PULP PAPER AND POWER PLANTS
ENGINEERS & CHEMISTS
INDUSTRIAL DESIGN
PLANT IMPROVEMENT
LABORATORY TESTS

Robins Conveying Systems
FOR HANDLING BULK MATERIALS
Write for Handbook of Conveyor Practice
ROBINS CONVEYING BELT COMPANY
New York Chicago Pittsburgh Boston

FERGUSON ENGINEERS
JOHN F. FERGUSON
Complete Pulp & Paper Mills, Investigation of New Enterprises, Special Heat & Power Applications, Hydro-Electric Developments, Steam-Electric Power Systems, Sectionalized Paper Machine Drives
Analysis, Design, Construction, Operation Efficiency
1210 First National Bank Bldg.
Holyoke, Mass. CHICAGO, ILL.

HARDY S. FERGUSON
CONSULTING ENGINEER
200 FIFTH AVENUE NEW YORK CITY
Member Am. Soc. C. E.
Member Am. Soc. M. E.
Member Eng. Inst. Can.
PAPER, PULP AND FIBRE MILLS
INCLUDING BUILDINGS AND COMPLETE MECHANICAL EQUIPMENT
WATER POWER DEVELOPMENT
DAMS, STORAGE RESERVOIRS AND OTHER HYDRAULIC STRUCTURES
STEAM PLANTS
Examinations
Reports
Estimates of Cost
Designs
Specifications
Valuations

KARL A. LEFREN
Consulting Engineer
Member A. S. M. E.
171 Madison Ave., New York City
INDUSTRIAL POWER REPORTS
PAPER AND BOARD MILLS DESIGNS
MILL CONSTRUCTION CONSTRUCTION

New York, February 1, 1926.

ACTIVITY on a fairly wide scale prevails throughout the paper industry. Demand for most kinds of paper is developing in a consistent manner and in comparatively large volume; it is perfectly true consumers are proceeding in a somewhat cautious way in acquiring supplies, mostly limiting orders to tonnage directly needed, but the fact of the matter is paper consumption is heavy enough to keep buyers more or less constantly in evidence and to lead to a moderately active market.

Nearly everyone in the trade is agreed the present situation is very healthy, and that prospects are bright. The careful purchasing by consumers in itself attests to the healthiness of the market because there is little or no accumulation of stocks in any quarter. Publishers, printers, converters and other consumers are watching the market closely, placing orders today for what they require tomorrow, yet in the aggregate absorbing supplies fully equal in tonnage to this period in any previous year. Some new high records of paper production and consumption were established in 1925; indications are these new records will be surpassed this year. Last year, or at least a good part of it, was not what could be called as altogether favorable for business. The latter half of the year saw brisk activity in most lines of business but the first half was far from satisfactory. This year, there seems every reason to believe, will witness better allround conditions, more stability in business and a more consistent trade activity; in which case demand and consumption of paper should increase further.

The newsprint branch of the industry can well be proud of its record for 1925. Production of print paper in both the United States and Canada exceeded all former totals of previous years, jumping to a total of 3,052,535 net tons for both countries, compared with 2,834,418 tons in 1924, 2,751,232 tons in 1923, 2,528,021 tons in 1922, 2,033,301 tons in 1921, and 2,387,138 tons in 1920. Back in 1920 during the after-the-war business boom production of newsprint mounted to unheard of levels. It was thought production had just about reached its zenith; that the consumptive fields could no longer absorb any larger supply. Since that year, however, production has increased steadily with the single exception of 1921 when a period of depression occurred, and despite the tremendous gain recorded last year it certainly does not appear the expansion of production has ended.

During December, production of newsprint by United States mills amounted to 136,681 tons, and shipments from mills to 137,718 tons. Production in Canada was 136,983 tons and shipments 140,165 tons, making a total United States and Canadian production of 273,664 tons and shipments 277,883 tons, according to the News Print Service Bureau. There was also 13,348 tons of newsprint made in Newfoundland in December, and 986 tons made in Mexico, so that the total North American production in December was 287,988 tons. During December, the United States mills operated at 94.4 per cent of capacity and the Canadian mills at 99 per cent. The newsprint mills also made 1,968 tons of hanging paper in December, of which 594 tons were manufactured in Canada. Comparing production during the year 1925 with previous years, the combined output of United States and Canadian mills was 8 per cent more than in 1924, 11 per cent more than in 1923, 21 per cent more than in 1922, 50 per cent more than in 1921, and 28 per cent more than in 1920.

A very encouraging feature of the newsprint statistics is that mill stocks have shown a steady decline for some time. At the end of December, combined stocks at United States and Canadian mills totaled 34,652 tons, against 38,981 tons at the end of November last. As recently as last August mill stocks of both countries amounted to 58,033 tons.

The monthly statistical summary of the industry issued by the American Paper and Pulp Association shows that production of paper of all classes in the United States during December was slightly above the November total, aggregating 481,211 net tons, against 478,333 tons in November, recording a rise of about 1 per cent. Production by United States mills in 1925, according to the association's figures, was as follows, monthly:

	Tons		Tons
January	487,536	July	458,263
February	448,080	August	466,757
March	487,372	September	474,015
April	489,336	October	515,063
May	486,690	November	478,333
June	467,763	December	481,211

Stocks of paper of all kinds at domestic mills at the end of December aggregated 216,912 tons, contrasted with stocks amounting to 217,498 tons at the end of the preceding month. Thus, stocks decreased slightly during December notwithstanding the increase in production.

Demand for newsprint is active. Sheet news is in good demand also. Prices are firm to an extreme.

The movement of book paper is increasing steadily. In fact, it can be stated the market for this class of paper has improved wonderfully in the past couple of months. Publishers of trade periodicals and fiction magazines are increasing the size of their publications almost constantly, and, obviously, more and more book paper is needed. The most popular weekly periodical is printing issues of 260 pages and thereabouts, which is precious close to the record for this publication. Mills catering to contract customers have practically no book paper to direct to the open market; demand from spot buyers is expanding, while the Government has just placed contracts for sizable quantities of book paper which will help to enliven the market. Prices tend upward decidedly, ranging from about 6 to 8 cents a pound for machine finished book, and from 8 cents up to 14 cents and more for coated book paper.

Fine papers are enjoying a little better market activity. Most writing paper mills still are working at a good deal less than maximum capacity but the demand is growing slowly and manufacturers are increasing their production in similar proportion. Prices exhibit much firmness with now and then a slight advance reported on some lines. In view of the price position of pulp and rags, fine papers seem destined to rule firm for some time to come.

Coarse papers are wanted in unusually good volume for this period of the year. Merchants and store owners all over the country presumably expect a big pre-Easter season and are laying in supplies of wrapping and tissue paper along with merchandise stocks. Wrapping for converting is selling in good tonnage also. Prices of both tissue and wrapping are firm.

Building felts are awaiting the opening up of their season but in the meantime there is a fairly good movement into consuming channels. Other building papers are in moderate call and quotably firm. Wall board is in steady demand with prospects favorable for broader market activity as the spring draws nearer.

Box boards are in better demand than since last fall. Paper box manufacturers in all the large centers are fairly busy and are buying board freely, particularly since the trend in board prices has been upward, the several advances seeming to stimulate demand. Mills in the East are reported booked up in most cases for about a month ahead, and are quoting plain chip board at $45 per ton for New York delivery and filled news board at $47.50 a ton. Demand for container board is very good and mills making this article are busily engaged.

Satisfaction in Sizing

THE effect of sizing upon the quality of paper is far reaching. In fact, it is considered a "key" process. The recognized importance of sizing, therefore, necessitates the use of a dependable size—such as Kalbfleisch Rosin Size has invariably proved itself to be.

Equally valuable is Kalbfleisch service. The close contact of these engineers with sizing processes has given them a fund of knowledge that is gladly placed at your disposal. They will co-operate in every way to secure the best results from the De Cew patented sizing process in conjunction with Kalbfleisch Chemicals.

Their time is yours—please feel free to call upon them—they welcome the opportunity to confer with you.

The KALBFLEISCH *Corporation*

200 Fifth Ave. New York

Factories: Erie, Pennsylvania
Brooklyn, New York
Kalamazoo, Michigan
Elizabeth, New Jersey
Chattanooga, Tennessee
Waterbury, Connecticut

Domestic Raw Materials

Papermaking Rags

The market for papermaking rags continues rather quiet. Demand from mills is at best slow; most paper manufacturers are buying merely to cover direct wants, while there are numerous indications a majority of the large consumers are well fixed with stocks on hand and therefore are not obliged to engage in purchasing operations except on a small scale. It would appear as if the market is becoming somewhat top-heavy notwithstanding a fairly low supply of certain grades. There are some classes of rags which have been accumulating for quite a long time, and these grades today are just as difficult to sell in volume as has been the case for months despite the fact paper mills apparently are busier at present than in a long time. On the other hand, some descriptions of rags are anything but plentiful, buyers experience considerable trouble locating all of such grades they want, and prices on such rags are steady to firm.

There appear to be two all-important factors in the rag situation. One of these is that demand for new cuttings and the better grades of old rags from fine paper mills has been very slow for a considerable period. Obviously, such rags are accumulating in dealers' hands even though it is a fact production of most grades, especially new cuttings, is subnormally small. The other prime factor is that roofing paper manufacturers have been operating their mills on a curtailed scale for the past several months. Instead of giving datings on orders for roofing felt as they have been accustomed to in the past, felt manufacturers have refused to grant this accommodation to jobbers this winter, with the result demand for felt has been held mostly in abeyance, jobbers and consumers holding off buying until knowing better what they likely will need. Consequently, consumption of rags by roofing paper mills has been low recently instead of holding to a fairly high level as in past winters.

Insofar as writing paper manufacturers are concerned, there seems little reason for them worrying regarding their rag supplies over the next few months. There is every probability there will be plenty of rags of the qualities they consume. Perhaps some grades of new cuttings will be hard to secure in usual lots, depending on the changeable call for clothing and the resultant varying production of the different descriptions of cotton cuttings, but there should be ample supplies of old white rags, thirds and blues, and similar grades. It is no secret that dealers in various parts of the country have good-sized stocks of whites and blues, having been unable to dispose of these rags for some time and in spite of the acknowledged shortage of mixed rags and the curtailment of rag sorting operations.

As regards roofing rags, which, incidentally, are the lowest quality and cheapest-priced class of papermaking rags, the outlook is somewhat perplexed. Should the felt mill enjoy a very active season this year, commencing along about March 1, a mild shortage of roofing rags might develop, notwithstanding present stocks are moderately large. It is absolutely a fact that supplies of domestic rags coming from country sources are small. Inclement weather has held up collections, the increased use of rags in households for automobiles, the changing styles of garments—particularly women's clothes—and other causes have led to smaller visible supplies of domsetic rags than has been the case in years. However, imports of papermaking rags, and more especially the roofing mill grades, have kept up in good volume, and from all indications there are big supplies available abroad for consumers in this country should they issue a call for them.

An illustration of what could happen in the roofing rag market occurred during January. One eastern felt mill procured an order for a large quantity of roofing felt and was obliged to go into the market and purchase rags on a fairly heavy scale. Almost overnight the rag market jumped, and before the buyer in question secured all the rags desired prices had advanced fully $5 to $6 a ton. Most roofing paper mills are well covered with rags in stock and also bought for future delivery but the fact should not be overlooked that the active period in felt this year promises to come all at once within the next month or two, and should demand for the commodity exceed expectations, the necessary buying manufacturers would have to do might lead to a sharp rise in rag values.

After scoring an appreciable advance, the roofing stock market has eased again. Current quotations range around 2.15 cents a pound at dealers' shipping points for No. 1 domestic packing, and 2 cents for No. 2 stock. Foreign dark cottons are quoted at about 2.10 cents a pound ex dock New York, and foreign linsey garments at 2.25 cents.

Old whites are rather nominal in price. So few sales of importance are transpiring it is difficult to ascertain what such rags actually are worth. It is evident, however, paper mills can buy No. 1 repacked whites at 7 cents a pound at shipping points, and No. 2 repacked at 4.25 cents. Repacked thirds and blues are quoted by dealers at 3.50 cents a pound at points of shipment, and rough blues at 2.35 to 2.50 cents.

New cuttings have moved slightly lower; that is, some grades. No. 1 white shirt cuttings are reported available at 14 cents a pound at shipping points, fancy shirt cuttings at 8.50 cents, white lawns at 12.25 cents, blue overall cuttings at 10.25 cents, light silesias at 10.50 cents, and washables at 7.25 cents.

Average quotations f. o. b. shipping points and ex dock New York are as follows:

New Stock—	New York and Chicago
White shirt cuttings, No. 1	14.00-14.25
White shirt cuttings, No. 2	9.75-10.00
Fancy shirt cuttings	8.50- 8.75
Washables, No. 1	7.00- 7.25
Unbleached muslins	14.00-14.25
White lawns	12.25-12.50
Overall cuttings, blue	10.25-10.50
Black silesias	5.50- 5.75
Light flannelettes	11.50-11.75
Canton flannels, bleached	12.00-12.25
Canton flannels, unbleached	11.75-12.00
Shoe cuttings, bleached	13.00-13.50
Shoe cuttings, unbleached	12.00-12.50
Light silesias	10.50-10.75
O. D. khaki cuttings	7.25- 7.50
Mixed khaki cuttings	6.25- 6.50
Corduroy cuttings	5.50- 5.75
Cottonade cuttings	5.00- 5.25
Linens, No. 1 white, foreign	15.00-15.50
Light prints, extra, foreign	3.00- 3.50
Old Stock—	
Whites, No. 1, repacked	6.75- 7.50
Whites, No. 2, repacked	4.00- 4.50
Whites, house soiled	3.00- 3.25
Whites, street soiled	2.50- 2.75
Lace curtains	6.50- 7.00
Thirds and blues, rough	2.35- 2.50
Thirds and blues, repacked	3.50- 3.75
Black stockings	4.50- 4.75
Cotton canvas, No. 1	5.75- 6.25
White cotton batting	4.75- 5.00
Roofing, No. 1	2.10- 2.20
Roofing No. 2	2.00- 2.10
Dark colored cottons, foreign	2.10- 2.20
Blue linens, foreign	5.00- 5.25

Quality First

—and Always

ALKALI

There is no need for specifications when you order Diamond Alkalies—The quality is guaranteed—Diamond Soda Ash over 99% pure—Diamond Caustic Soda over 98% pure.

Manufactured and Sold Direct to Consumer by

DIAMOND ALKALI COMPANY
PITTSBURGH, PA.

Commercial Sulphate of Alumina

Liquid Chlorine

Single Unit Tank Cars — Multi-Unit Tank Cars
150-Lb. Cylinders — 1-Ton Containers)

Standard Bleaching Powder

Natrona Porous Alum

Pennsylvania Salt Mfg. Company
Philadelphia, Pa.

RUSS GELATIN CO.

WORKS—WESTFIELD, MASS.

MANUFACTURERS OF

GELATIN and GLUE

ANIMAL SIZING GLUE STOCK

LARGEST SPECIALISTS IN AMERICA ON

FINE WRITING PAPER SIZING

E. F. RUSS COMPANY 287 Atlantic Avenue BOSTON, U. S. A.

UNION SULPHUR

The Best for Better Sulphite Pulp

Guaranteed 99½ Per Cent Sulphur
Combined with 100 Per Cent Service

Substantial warehouse stocks always maintained at strategically located seaboard stations insure

Prompt Delivery Against All Orders

The Union Sulphur Company
Frasch Bldg., 33 Rector St., New York, N. Y.

Gray linens, foreign	5.25- 5.50
White linens, foreign	9.50-10.00
Light prints, extra, foreign	2.50- 2.75

Rope and Bagging

Prices of old rope are lower, the market having gone through a period of readjustment when values declined rather sharply. However, the tone is now steadier and it appears as if prices are touching bottom, with the supply situation tending to make for greater firmness. There is no scarcity of old rope but at the same time available supplies, and more especially of domestic rope, are far from large, with dealers contending fresh supplies are coming forward from production sources in unusually small amounts. No. 1 domestic old manila rope is bringing 5.75 cents a pound f. o. b. shipping points, and foreign No. 1 old rope about 5 cents ex dock New York. Strings are steady at 2 to 2.25 cents a pound at shipping point for mixed strings.

Old bagging of all kinds is in good demand and quotably firm. No. 1 scrap burlap is fetching 3 cents at dealers' points freely, and it is quite likely sales have been recorded at higher than this price. Roofing bagging is selling at 1.75 cents at shipping points, or ex dock New York for foreign stock. Scrap gunny bagging is quoted at about 4 cents or slightly higher.

F. o. b. shipping point and ex dock New York quotations follow:

	New York and Chicago
Gunny, No. 1 domestic	4.00-4.25
Gunny, No. 1 foreign	4.00-4.25
Scrap bagging, No. 1	3.00-3.25
Roofing bagging	1.75-1.85
Wool tares, heavy	4.25-4.50
Wool tares, light	4.00-4.25
Manila rope, No. 1 foreign	4.75-5.00
Manila rope, No. 1 domestic	5.50-5.75
Sisal strings	2.75-3.00
Mixed strings	2.00-2.25

Old Paper

The market for old paper has improved perceptibly. Demand from box board and other mills has broadened, which together with the inclement weather in most of the large producing centers and reduced collections, has caused prices to mount, and the situation at present is characterized by more strength than in a lengthy period. Prices of all grades display a firm tone and are pointed upward. Shavings are quoted at around 3.65 cents a pound f. o. b. shipping points for No. 1 hard white, and at an average of 2.85 cents for No. 1 soft white shavings. Old kraft paper is freely fetching 2.35 cents at points of shipment, and ledger stock 1.70 cents with extra quality packing commanding above this figure.

Low grades have scored more of an advance in price than have the better qualities. Folded news is now selling at 70 to 75 cents a hundred pounds at dealers' shipping points, while No. 1 mixed paper is bringing 55 to 60 cents. Reports state that in the East packers are not working the city dumps except in a superficial way, and available supplies of common mixed paper are light, with this grade quoted at 40 to 45 cents a hundred pounds at shipping points. Book stock has risen slightly to where dealers ask at least 1.10 cents a pound for heavy No. 1 books and above is most often quoted.

The following are prices f. o. b. shipping points:

	New York and Chicago
Hard white shavings, No. 1	3.60-3.80
Hard white shavings, No. 2	3.00-3.25
Soft white shavings	2.80-2.90
Colored shavings	1.15-1.30
Heavy book, No. 1	1.10-1.20
Crumpled book, No. 1	.80- .90
Ledger stock	1.65-1.75
Kraft No. 1	2.35-2.45
Manilas, No. 1	.75- .85
White blank news	1.70-1.80
Over-issue news, No. 1	.80- .85
Folded news	.70- .75
Sulphite mill wrappings	.80- .85
Mixed paper, No. 1	.55- .60
Common paper	.40- .45

Giving substance to an ideal

WHO among dyestuff users has not come to the conclusion that the organization delivering quality in dyestuffs as well as dependable service is entitled to every encouragement?

As the sterling mark distinguishes the trustworthy and valuable so the trademark of this company conveys the message of quality in dyestuffs.

We have given reality to an ideal and our encouragement is the increasing patronage of experienced dyestuff users.

GENERAL DYESTUFF CORPORATION

Boston, Philadelphia, Providence, R. I. — 230 Fifth Avenue, New York — Chicago, San Francisco, Charlotte, N. C.

JOSEPH GATTI — President and Treasurer

GATTI Paper Stock Corporation

Formerly with the Gatti-McQuade Co.

Paper Manufacturers' Supplies

COTTON AND WOOLEN WASTE

All Grades of Rags and Paper Stock, New Wrapping Paper, Box Board and Cordage

Main Office: 41 East 42nd St., New York, Liggett Bldg.

Packing House: 12th and Monroe Sts., Hoboken, N. J.

Western Paper Makers Chemical Company

Paper Makers Chemical Company

Kalamazoo, Mich. — Holyoke, Mass. — Easton, Pa.

Jacksonville, Fla. — Pensacola, Fla. — St. Austell, England

Rosin Size, Satin White, Clays, Fillers

Foam Killer, Felt Soap and Other Specialties

SOLVAY

STANDARD IN SODA SINCE 1881

Quality and Service Guaranteed by the Largest Source of Supply

Soda Ash
Caustic Soda

Over 75 stock distributing points assure prompt shipment with minimum transportation charges.

The Solvay Process Co.

Detroit, Mich.; SYRACUSE, N. Y.; Hutchinson, Kas.

Sales Department
WING & EVANS, Inc.
40 Rector Street, New York

Boston Cincinnati Cleveland Detroit Pittsburgh
Chicago Syracuse Indianapolis
Philadelphia St. Louis Kansas City

Cheney Pulp & Paper Company
FRANKLIN, OHIO

Manufacturers of All Grades

RAG PULP
and
JUTE PULP
for
PAPER MILLS

Samples and Prices Submitted Upon Request

A MARK OF RESPONSIBILITY ON PRODUCTS OF STANDARD QUALITY

ALUMINUM SULPHATE

The General Chemical Company manufactures to standards of purity and uniformity nowhere excelled—standards which are identical in each of the Company's many plants. Wherever you are, the chemicals you receive are of standardized General Chemical quality.

GENERAL CHEMICAL COMPANY

40 Rector Street, New York

Baltimore Cleveland Denver Philadelphia Providence
Buffalo Easton Los Angeles Pittsburgh San Francisco
Chicago St. Louis

The Nichols Chemical Co., Ltd., Montreal

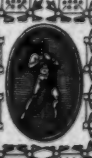
Cable Address: Lyrurgic N Y

THE fact that new customers are constantly joining our ranks, and very few old ones ever leave us is more than a matter of gratification to us. It is a good reason for your using Hercules Wood Rosin. If you are one of those on the "outside", write us for information about this product.

HERCULES POWDER COMPANY
(INCORPORATED)
941 Market Street, Wilmington, Delaware

Sales Offices:

New York, N. Y. Louisville, Ky.
Chicago, Ill. Buffalo, N. Y.
San Francisco, Cal. Duluth, Minn.
Chattanooga, Tenn.
Birmingham, Ala



Pulp Wood

Reports tell of a steady demand for pulp wood. Mills in general are chewing up large quantities of wood and consequently are kept more or less on the lookout for additional supplies right along. The activity in the market of course reflects the expanding pulp production, and it is agreed generally the outlook for wood is most favorable. Prices are firm and tending higher. Not much actual change has occurred, however.

Figures just released show that Canada greatly increased her exports of pulp wood last year over the preceding year. Total exports in 1925, practically all of which came to the United States, were 1,423,502 cords, valued at $14,168,935, contrasted with exports of 1,330,250 cords of a value of $13,536,058 in 1924.

Mechanical Pulp

A steady demand exists for mechanical pulp, available supplies other than on contract are noticeably limited, and prices are pointed higher. In fact, it is said by authorities in the trade that surprisingly little ground wood is to be had in the open market. Of course, those consumers obtaining supplies on contract are well covered, but the fact remains most producers are sold well ahead and buyers seeking spot tonnage are having no easy time locating the desired material. Grinders in both the United States and Canada are working at a fairly brisk pace for this time of the year, yet consumption by newsprint, board and other mills is so heavy practically all the pulp being manufactured is moving directly into consumption.

Domestic grinders quote around $34 to $35 a ton f. o. b. pulp mills for prime spruce ground wood. Canadian producers are asking anywhere from $30 per ton upwards, depending on the haul to consuming centers and the air dry test. Imported ground wood of Scandinavian origin is quoted at $40 a ton or higher ex dock American Atlantic ports, being beyond a parity with domestic and Canadian pulp and therefore selling slowly.

Production of ground wood in the United States during December amounted to 93,144 net tons, compared with 90,213 tons in the preceding month. Mill stocks at the end of December aggregated 124,742 tons, against 124,767 tons for identical mills at the end of November.

Chemical Pulp

From almost every direction come reports of steadily improving conditions among domestic pulp mills. Demand for practically all descriptions of domestic wood pulp is good; most mills are working on a far larger scale than in a long time; consumers are showing increasing desire for domestic pulp, and the prospects for continued activity are bright indeed. The happy position of the market is largely a reflection of the tight supply condition abroad; this necessarily does not mean paper and board manufacturers are taking domestic pulps because they cannot get Scandinavian supplies, but the fact mills in Europe are so well sold up, thus limiting the supply available to American consumers, is obliging them to give more attention to our own product and it might be stated that at last domestic pulp is coming into its own.

Prices are steady to firm. There has been no broad change in the last several weeks but the tendency is upward and higher quotations seem imminent if for no other reason than manufacturers are getting to the point where they haven't much supply to offer. Bleached sulphite is quoted at 4 cents a pound upwards f. o. b. pulp mills, some brands fetching as much as 4.75 cents. News grade sulphite is firm at 2.90 to 3 cents a pound at pulp plants, No. 1 unbleached sulphite at 3 to 3.25 cents, and easy bleaching sulphite at 3.20 to 3.40 cents. Bleached soda pulp is around 3.75 cents at pulp mills, and No. 1 kraft 3.25 cents.

United States mills produced a total of 98,528 tons of chemical pulp in December, contrasted with 102,400 tons in the preceding month. At the end of December mill stocks amounted to 18,872 net tons of all grades, contrasted with 18,890 tons at the end of November.

Bleached sulphite	4.00-4.75
Easy bleaching sulphite	3.20-3.40

"Distinguished for Its High Test and Uniform Quality"

Soda Ash

Caustic Soda

Bicarbonate of Soda

THE MICHIGAN ALKALI CO.

General Sales Department

21 East 40th Street **New York**

SALT CRYSTALS

WE VIEW the industrial world through a salt crystal. Our organization thinks salt and lives salt.

This enthusiasm for salt on the part of International men has a gratifying reaction in users' plants. It is a guarantee that International supplies salt unexcelled in purity.

When will you try International?
Industrial plants benefit from its high test quality.

INTERNATIONAL

SCRANTON PA. INTERNATIONAL SALT COMPANY, Inc. NEW YORK OFFICE 7 RECTOR ST

Uncle Jake says—

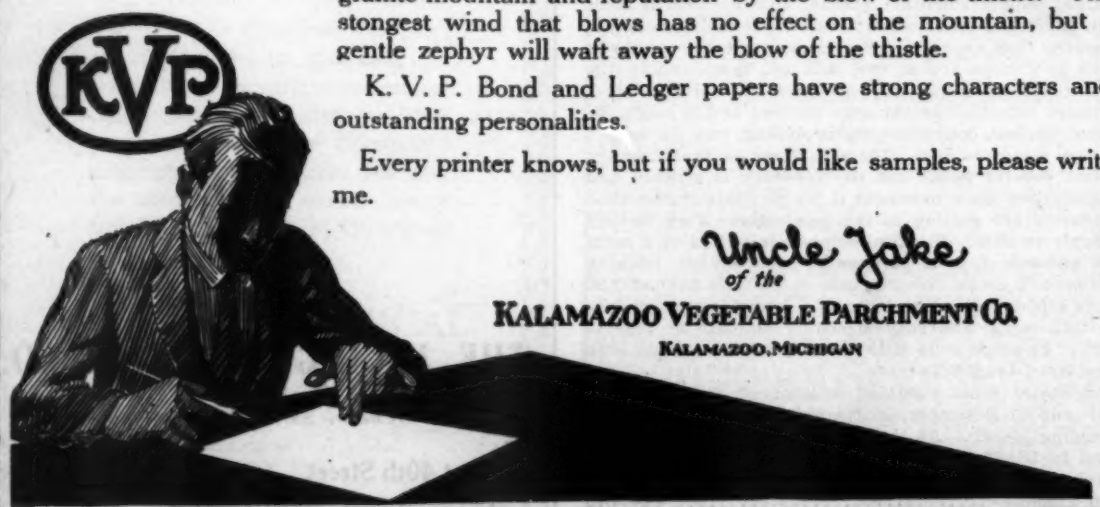
IT IS very much easier to live down to our characters than up to our reputations.

The question of character vs. reputation has been mulled over by wiser folks than we claim to be, but our own notion is that character is represented by the granite mountain and reputation by the blow of the thistle. The stongest wind that blows has no effect on the mountain, but a gentle zephyr will waft away the blow of the thistle.

K. V. P. Bond and Ledger papers have strong characters and outstanding personalities.

Every printer knows, but if you would like samples, please write me.

KVP



Uncle Jake
of the
KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO, MICHIGAN

New Papers

Writing—	
White rag	15.40
White sulphite	11.30
Colored rag	15-40
Colored sulphite	10-30
Ledger—	
White rag	17-40
White sulphite	13-30
Colored sulphite	12-30
Colored rag	16-40
Bonds—	
White rag	16-40
White sulphite	9-30
Colored sulphite	9-30
Colored rag	15-40
Book—	
No. 1 S. & S. C	6.50- 8.00
Machine finished	6.00- 8.00
English finished	6.25- 8.00
Coated and enameled	8.00-14.00
Lithograph, M. F	9.00-15.00
Newsprint—	
Rolls, contract	3.25- ....
Rolls, transient	3.50- ....
Sheets	3.75- 4.00
Side runs	3.00- 3.25
Cover Stock—	
Coated, both sides	10.25
Coated, one side	10.15
Tissue—	
No. 1 white, 20x30	.80- .90
No. 2 white, 24x36	.75- .80
No. 1 manila, 24x36	.75- .80
Kraft	.90- 1.00
Wrapping—	
No. 1 Kraft	6.00- 6.50
No. 2 Kraft	5.50- 6.00

Boards—	New York and Chicago
Solid news	50.00-55.00
Straw	55.00-60.00
Plain chip	45.00-47.50
White coated chip	60.00-65.00
Manila coated chip	55.00-60.00
Binder's board	72.50-77.50

Chemical Pulp

(*Continued from page* 1843)

Unbleached sulphite, No. 1	3.00-3.25
News grade sulphite	2.90-3.00
Soda pulp, bleached	3.75-4.00
Mitscherlich, unbleached	3.25-3.75
Kraft, No. 1	3.10-3.30
Screenings, refined	1.50-1.75

Chemicals

Papermaking chemicals are moving in good volume against contracts, and current demand developing in a fair way. Prices generally show firmness with an upward tendency. Casein is quoted at around 13 cents a pound, duty paid, for the imported product, with domestic producers asking 12.50 to 13.50 cents. Bleaching powder is quoted at 2 to 2.40 cents a pound in large drums f. o. b. works, while brimstone continues firm at $15 to $16 a ton at mines.

Average quotations are as follows:

Alum, lump ammonia	3.50- 3.75
Alum, lump starch	3.75- 4.00
Blanc fixe, powder	3.75- 4.25
Bleaching powder	2.00- 2.40
Brimstone (long ton, at mine)	15.00-16.00
Casein (duty paid)	12.50-13.50
Caustic soda, spot delivery	3.10- 3.15
China clay, domestic washed	10.00-12.00
China clay, foreign	13.00-20.00
Rosin, grade E	15.45-15.75
Satin white	2.00- 2.25
Soda ash, 58 per cent light (bags)	1.38- ....
Starch, papermakers', in bags	3.32- ....
Talc (ton)	17.00-18.00

Celebrates 50 Years in Paper Trade

Hamilton T. Disbrow, president of Coy, Disbrow & Co., Inc., paper merchants of 309-311 Canal street, New York, celebrated his fiftieth anniversary in the paper trade at the beginning of this year. Mr. Disbrow on January 1, 1876, together with his brother, H. Grinell Disbrow, formed the firm of Disbrow Brothers, located at 58 Warren street, New York, next door to the old Libby Hotel, to deal in paper. A few years later he withdrew from the firm and went with Wilkinson Bros. Company, paper jobbers, as a salesman, and remained with that firm until 1898, when he assisted in the organization of Coy, Hunt & Company, Inc., of which he became vice president and director. In February, 1922, he withdrew from Coy, Hunt & Company, Inc., to assist in the organization of Coy, Disbrow & Co., Inc., in which company he was elected president and which position he still holds.

In his 50 years of service Mr. Disbrow has witnessed many changes in the paper trade. Numerous concerns whose names were among the leaders in the manufacturing as well as the jobbing branches of the industry have long since disappeared. There are nevertheless a few firms which were prominent in the trade 50 years ago that are still among the leaders today. Fifty years ago the paper jobbing trade in New York was located largely in Beekman and Duane streets, with a few concerns on John street. The building now occupied by Coy, Disbrow & Co., Inc., was at that time the department store of Arnold, Constable & Co., being that company's uptown store. Tenth street was considered way uptown, and the horse-car terminal at Fifty-ninth street was regarded as being in the country.

Saranac Pulp & Paper Company, Inc., Plattsburg, N. Y., has opened a general sales office at 527 Fifth Avenue, New York, which will be conducted by Arthur N. Waring, manager of sales. The Saranac Pulp & Paper Company manufactures machine glazed papers, the line consisting of Mitscherlich sulphite machine glazed bleached and unbleached for both conversion and wrapping purposes. The president of the Saranac Pulp & Paper Company is H. P. G. Norstrand, who is well and favorably known to the trade as a practical pulp and paper manufacturer.

D. Manson Sutherland, Jr., formerly engaged with the Wallpaper Manufacturers, Ltd., London, England, general manager of the Agasote Millboard Co., vice-president of the Universal Fibre Co., and president of the Panelyte Board Co., has discontinued actual manufacturing operations in order to confine his entire time to consulting work. His business is now that of consulting chemical engineer, office in Broad Street Bank Building, Trenton, N. J.

BATHURST LUMBER COMPANY, LIMITED

PRICE & PIERCE, LTD.
17 East 42nd Street, NEW YORK CITY

ARE NOW THE

SELLING AGENTS
for Bathurst Pulp in the United States

Unbleached Sulphite 50 tons daily
Kraft Pulp 50 tons daily

Our pulp is made from Canadian Spruce
We ship in sheets, baled

BATHURST, NEW BRUNSWICK, CANADA

The B.C. QUALITY PULPS

HAFSLUND NORWAY — **"HAFSLUND BEAR"** Bleached Sulphite

F:HAGA — **"FORSHAGA"** Bleached Sulphite

KRAFT HURUM NORWAY SPECIAL — **"HURUM SPECIAL"** Extra Strong Kraft

KOOS BAC — **"BAMBLE"** Extra Strong Kraft

The Borregaard Company
200 Fifth Ave. Incorporated New York, N.Y.

The Pulp and Paper Trading Co.
21 East 40th Street New York City

DEALERS IN DOMESTIC CHEMICAL AND MECHANICAL PULPS AND PAPER

AGENTS FOR
J. & J. Rogers Company, Ausable Forks, N. Y.
E. B. Eddy Company, Ltd., Hull, Canada
Canadian Kraft Limited, Three Rivers, Canada
Dealers in Wayagamack Kraft Pulp
Howard Smith Paper Mills, Montreal, Quebec
EASTERN AGENTS of Sulphite Pulp. Made by Port Huron Sulphite & Paper Co., Port Huron, Mich.

J. ANDERSEN & CO.
21 East 40th Street New York City

Importers of Chemical Pulps
BLEACHED AND UNBLEACHED

Agents for Kellner Partington Paper Pulp Co., Ltd.
Sarpsborg, Norway; Forshaga, and Edsvalla, Sweden

We Offer Cargo Lots of
DRIED BEET PULP
For
PAPER MAKING

Czarnikow-Rionda Company
London 106 Wall Street, New York Havana

EXPORTS

Exports of paper and board from the United States during the month of November, while in the aggregate showing a decrease of 3 per cent under the preceding month, were with few exceptions considerably above those of the corresponding month in 1924, the total value of $2,093,983 exceeding the exports in November, 1924, by 8 per cent, according to the Paper Division of the Department of Commerce.

The outstanding gains occurred in shipments of newsprint paper, photographic paper, miscellaneous writing paper, surface coated paper, wrapping paper of various sorts, carbon paper, and paper bags. Exports of book paper in November again took a sharp downward turn, the total falling short of any month since the preceding February, when they amounted to only 1,038,106 pounds. Shipments of paper board, however, were generally larger than during the same month of 1924, and the same is true also of a number of other classes of paper and paper manufactures, such as tissue and crepe paper, toilet paper, towels and napkins, filing folders, index cards, papeteries, cigarette paper, and cash register and adding machine paper.

Exports of paper and board during the first eleven months of 1925 were somewhat under the total for the same period of 1924 owing to decreases in a number of important classes, notably book paper and paper board and strawboard, and also the downtrend in average export values of a number of leading items, such as newsprint, wrapping paper, photographic paper, surface coated paper, paper hangings, paper bags, and paper boxes and cartons. The total value of paper exports during last year up to December 1 reached a sum of $22,005,370, a decrease of only $35,271 (less than one per cent) compared with the same period in 1924. This loss in finished paper and products, moreover, was more than offset by the greatly increased shipments of paper base stocks, which amounted to $5,332,569, against $3,580,436 in 1924.

IMPORTS

Wood Pulp

Displaying pronounced strength, it appears as if additional business activity would exist in the imported wood pulp market if larger supplies of the commodity were available. As matters are, mills in Scandinavia, and also in other parts of Europe, are so well sold ahead they are unwilling to commit themselves further, and the offerings from producing sources abroad are at best limited, both as regards number and tonnage.

Probably never before has imported wood pulp been in a firmer market position and at the same time characterized by so healthy a market condition. The statistical position is strong indeed, and it seems as if it will become stronger. Mills in Sweden, according to reliable advices, have little or no pulp to sell for shipment during the remainder of this year; there have been some sales for shipment in the spring of 1927. In other words, Swedish pulp manufacturers have disposed of about all their 1926 output and now are beginning to contract for their next year's production. The Baltic has closed for the winter, and while arrivals of Scandinavian pulps recently at New York and other American Atlantic ports have been fairly heavy, the probabilities are they will slow down now that no more shipments can be effected from the East coast of Sweden until the spring thaw.

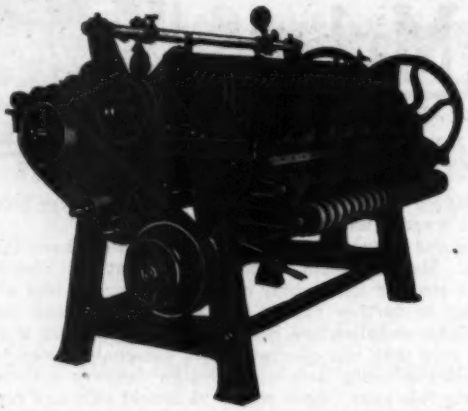
Paper and board manufacturers are showing keen interest in pulp. Many of them have wisely bought well ahead, and are in a position where they can look on for a while without engaging in further buying, yet there is profound interest in available supplies and it is stated by importers that any lots of pulp they can offer at within reasonable price bounds are finding a ready sale even though delivery may not be until late this year. Spot stocks of unsold pulp are reported unusually small; most importers have brought in little supply on speculation, and consignments have been rather few and of small quantity.

Imports of pulp into the United States during November, according to Government statistics, totaled 98,506 long tons of chemical pulp, compared with 105,121 tons imported in the preceding month. November imports brought the total for the first eleven months of 1925 up to 1,093,748 tons, giving a monthly average of 99,072 tons, contrasted with an average of 93,431 tons per month in the corresponding time of 1924. Imports of mechanical pulp in November amounted to 31,344 tons, making a total for the first eleven months of last year of 266,618 tons, or a monthly average of 24,238 tons, against an average monthly of 17,588 tons in the same period of 1924. Prices of pulp are gradually seeking higher levels. The upward trend of the market is slow but it is nevertheless certain, and importers are of the opinion new high levels will be reached before the winter is over. No. 1 bleached sulphite is quoted at a minimum of about 4.15 cents a pound ex dock, New York, and it is doubtful whether actually prime sulphite can be obtained at this figure, most quotations ranging up from about 4.25 cents. Strong No. 1 unbleached sulphite is quoted at around 3.15 cents a pound ex dock, New York, with extra quality brands held for as much as 3.35 cents. Easy bleaching sulphite is firm at about 3.50 cents, while standard prime Swedish kraft ranges from 3.20 cents upwards on the dock at New York or other American Atlantic ports. Foreign ground wood of Scandinavian origin is quoted from $40 a ton to as high as $45 in some cases ex dock, New York.

Receipts at the port of New York during January and current market quotations ex dock, New York, follow:

Bleached sulphite, No. 1	4.15- 4.50
Unbleached sulphite, strong, No. 1	3.15- 3.35
Unbleached sulphite, No. 2	2.90- 3.15
Easy bleaching sulphite	3.40- 3.60
Mitscherlich unbleached, genuine	3.50- 3.75
Mitschlerlich unbleached, ordinary	3.05- 3.15
Kraft, standard Swedish	3.20- 3.40
Groundwood, per ton	40.00-45.00

Bulkley, Dunton & Co., 3,990 bls. from Stugsund, 1,800 Hamburg, 9,250 Gefle, 4,500 Sundsvall, 1,220 Bremen, 7,375 Soderhamn and 3,000 Hernosand; Central Union Trust Co., 1,280 bls. from Oslo; Irving Bank-Columbia Trust Co., 1,100 bls. from Copenhagen; Buck, Kaier & Co., 900 bls. from Copenhagen and 2,438 Trondhjem; National City Bank, 700 bls. from Hamburg and 1,875 Sundsvall; Pagel, Horton & Co., 2,875 bls. from Gefle; Scandinavian Pulp Agency, 5,830 bls. from Sundsvall; Johaneson, Wales & Sparre, 8,180 bls. from Sundsvall and 299 Gothenburg; Guaranty Trust Co., 286 bls. from Hamburg; Castle & Overton, 1,715 bls. from Hamburg; M. Gottesman & Co., 1,200 bls. from Sundsvall and 1,200 Rotterdam; J. Andersen & Co., 5,000 bls. from Soderhamn, 2,400 Hernosand and 3,594 Sarpsborg; E. M. Sergeant Co., 108 bls. from Oslo and 839 Gothenburg; Birn & Wachenheim, 25 bls. from Rotterdam; J. F. Whitney & Co., 16,051 bls. ground wood from Sheet Harbor, N. S.; Order, 93 bls. from Rotterdam, 925 Oslo, 1,000 Gefle, 2,700 Antwerp, 440 Trieste, 3,670 Bremen and 1,800 Sundsvall.



PAPER CUTTERS

Single—Duplex—Diagonal

CUTTER KNIVES
PATENT TOP SLITTERS

HAMBLET MACHINE CO.
LAWRENCE, MASS.

Meisel Sheet Cutters

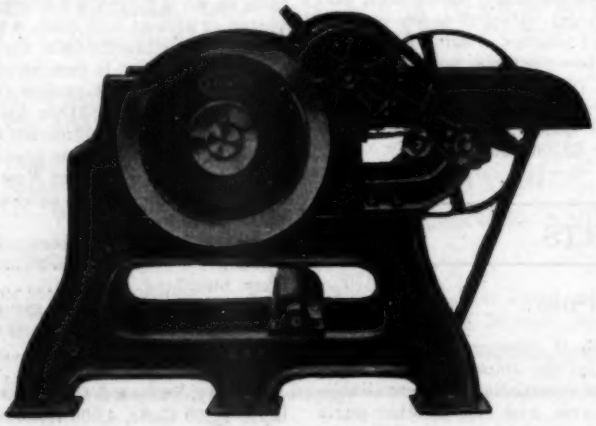
Automatic Intermittent Feed Sheet Cutting and Slitting Machine

Cuts all kinds and thicknesses of paper from news to the thickest box board, various kinds of cloths, combined cloth and paper, tinfoil and other material taken from the web.

Sheets up to 132 inches in length may be cut

Ask for Photograph C-1001

MEISEL PRESS MFG. CO.
942 Dorchester Ave. Boston, Mass.



RAG CUTTERS

Whatever You Cut, a GIANT Will Solve Your Problem

LET US FIGURE IT OUT FOR YOU

Taylor, Stiles & Co., Riegelsville, N. J., U.S.A.

WATEROUS ENGINE WORKS
Brantford, Ont., Canada
Canadian Representatives

R. J. MARX
133 Finsbury Pavement, London E. C.
Sole Agents for Europe

Paper Stock

Judging from the figures available, importations of papermaking rags showed a gain in January compared with the preceding month when, as reported, there was a fairly sharp decline in arrivals at New York and other American East coast ports. Receipts of rags at New York last month were fairly large, and there also was a steady import of other papermaking materials, including sizable quantities of old bagging. Imports of old rope, however, continued to decrease.

Imports of all kinds of papermaking material through the port of New York in January, with names of consignees, compiled from manifests of steamers reaching that port during the month, were as follows:

Old Rope

Brown Bros. & Co., 228 bls. and 726 coils; Ellerman's Wilson Line, 555 coils and 124 bls.; Amtorg Trading Co., 38 bls.; Mechanics & Metals National Bank, 44 bls.; Darmstadt, Scott & Courtney, 42 bls.; National City Bank, 88 bls.; W. Schall & Co., 49 bls.; Irving Bank-Columbia Trust Co., 37 coils; E. J. Keller Co., 270 Bls.; Order, 400 coils and 9 bls.

Old Bagging

E. Butterworth & Co., 46 bls.; Whitney Central National Bank, 800 bls.; Darmstadt, Scott & Courtney, 193 bls.; Mechanics & Metals National Bank, 427 bls.; Salomon Bros. & Co., 240 bls.; S. Birkenstein & Sons, 198 bls.; J. W. Hampton, Jr., & Co., 20 bls.; Daniel M. Hicks, Inc., 67 bls.; Stone Bros. Co., 170 bls.; L. H. Abenheimer, 62 bls.; W. Schall & Co., 44 bls.; Anglo-South American Trust Co., 96 bls.; National City Bank, 42 bls.; British Bank of South America, 19 bls.; Royal Manufacturing Co., 68 bls.; Kidder-Peabody Acceptance Corp., 57 bls.; Brown Bros. & Co., 52 bls.; Barrett Co., 99 bls.; W. Garrettson, 38 bls.; Strupp & Co., 194 bls.; E. J. Keller Co., 1,568 bls.; Order, 1,247 bls.

Rags

Atterbury & McKelvey, 404 bls.; Marx Maier Paper Mill Supply Co., 52 bls.; J. Cohen & Josephy, 12 bls.; Paul Berlowitz, 294 bls.; Stone Bros. Co., 968 bls.; American Wool Stock Co., 38 bls.; Castle & Overton, 56 bls.; Atterbury Bros., 38 bls.; Penrich & Co., 109 bls.; Van Oppen & Co., 8 bls.; Atlas Waste Mfg. Co., 39 bls.; L. Sher & Sons, 29 bls.; Rudolf Wolf, 96 bls.; C. R. Spence & Co., 191 bls.; Ignazio, Abela & Co., 46 bls.; Fidelity International Trust Co., 84 bls.; Darmstadt, Scott & Courtney, 14 bls.; Maurice O'Meara Co., 18 bls.; Victor Galaup, Inc., 325 bls.; Daniel M. Hicks, Inc., 52 bls.; Isaac Minsky, 49 bls.; Murray Freighting Co., 30 bls.; Independent Forwarding Co., 320 bls.; Barrett Co., 457 bls.; J. M. Jaffe, 56 bls.; Katzenstein & Keene, 224 bls.; New York Trust Co., 141 bls.; Chemical National Bank, 648 bls.; National Bank of Commerce, 3,151 bls.; Mechanical & Metals National Bank, 2,514 bls.; Philadelphia National Bank, 153 bls.; Union National Bank of Philadelphia, 111 bls.; National City Bank, 483 bls.; Anglo-South American Trust Co., 295 bls.; Chase National Bank, 1,378 bls.; Bank of New York & Trust Co., 207 bls.; Amtorg Trading Co., 8 bls.; Maurice O'Meara Co., 83 bls.; State Bank, 81 bls.; Irving Bank-Columbia Trust Co., 167 bls.; Seaboard National Bank, 183 bls.; Equitable Trust Co., 40 bls.; Merchants National Bank of Richmond, 93 bls.; E. J. Keller Co., 2,584 bls.; Goldman, Sachs & Co., 81 bls.; W. Schall & Co., 168 bls.; R. F. Downing & Co., 63 bls.; Brown Bros. & Co., 373 bls.; A. W. Fenton, Inc., 398 bls.; Kidder-Peabody Acceptance Corp., 66 bls.; Baring Bros. & Co., 22 bls.; Order, 1,768 bls.

Miscellaneous Paper Stock

Daniel M. Hicks, Inc., 51 bls.; W. Schall & Co., 217 bls.; Seaboard National Bank, 97 bls.; Milton Snedeker Corp., 135 bls.; E. Butterworth & Co., 44 bls.; Hanson & Orth, 3,095 bls.; Anglo-South American Trust Co., 110 bls.; Equitable Trust Co., 249 bls.; Hughes-Fawcett Co., 29 bls.; Henry W. Peabody & Co., 15 bls.; Salomon Bros. & Co., 90 bls.; Bank of New York & Trust Co., 155 bls.; Guaranty Trust Co., 91 bls.; Mead Pulp and Paper Co., 140 bls.; E. J. Keller, 124 bls.; Order, 164 bls.

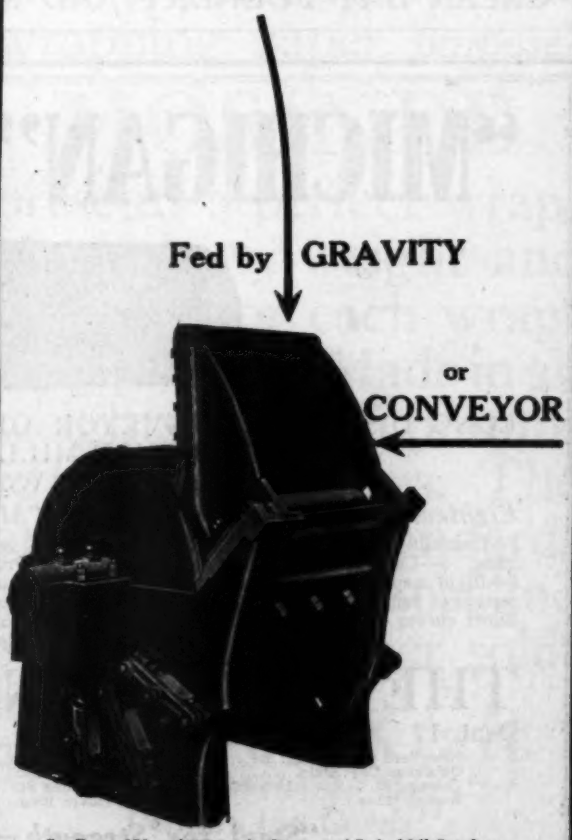
MITTS & MERRILL

The Mitts & Merrill Shredder will reduce magazines, books, old paper and boxboard, frozen or dried pulp laps, roll and sheet stock in a thoroughly economical manner.

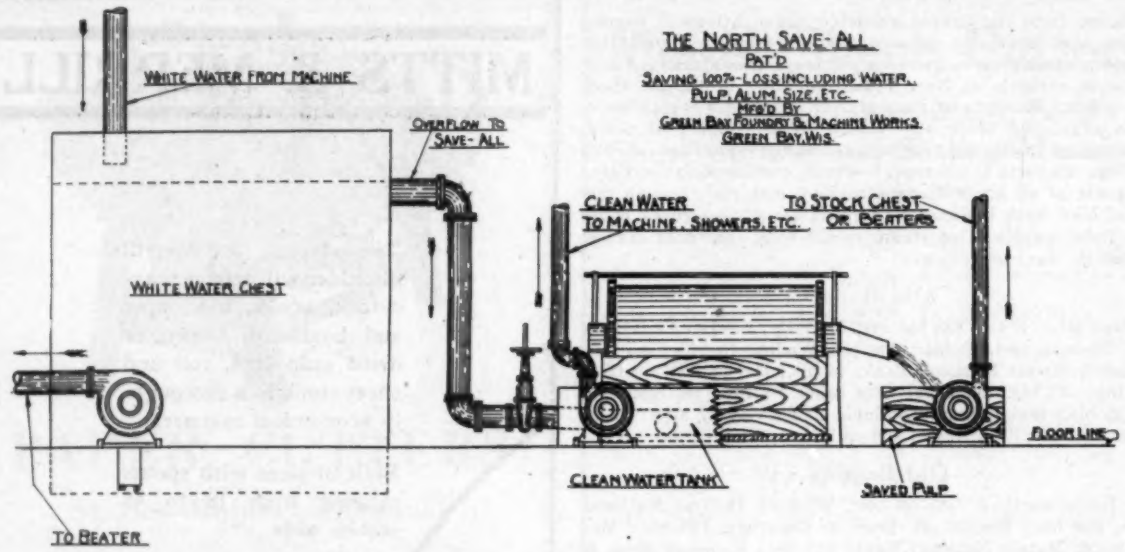
Built in sizes with spouts ranging from 18 to 45 inches wide.

We also build a 100% efficient "Hog" to reduce pulp mill bark and wood refuse.

MITTS & MERRILL
1013 Tilden St.
Saginaw, Mich.



See Pages 378 and 379 in the Paper and Pulp Mill Catalog



STOPPING POLLUTION AND MAKING A PROFIT

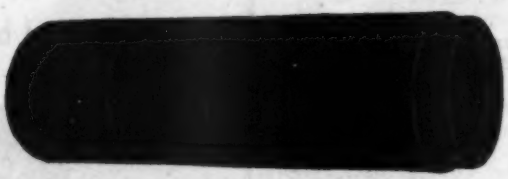
All stock returned to your machine with the water which conveyed it. All pulp returned to your chest, beater or pulp mill. Color, alum, size, clay used back in the furnish. Pulp used back on today's run and not mixed with cheap pulp. Saves water.

We Sell Water Filters, Valves, Pumps, Stone Plates, Thickeners

See Page 349 in the 1925 Paper and Pulp Mill Catalogue

GREEN BAY FOUNDRY AND MACHINE WORKS, Green Bay, Wis.

"MICHIGAN" Combination Steel and Wood Pipe



LONG DISTANCE CONVEYOR OF WATER AND PAPER STOCK IN PAPER AND PULP MILLS—Specially Adapted to Carry Sulphite, Ground Wood and "White Water"

Eighteen reasons why you should use "Michigan" combination steel and wood pipe

1—Durability of Wood Shell. 2—Sanitary. 3—20% more capacity than Cast Iron Pipe. 4—Simplicity in handling. 5—Light in weight. 6—Speed in laying. 7—Protects against freezing. 8—Not affected by Electrolysis. 9—Rigid inspection of materials. 10—Efficient construction of stave. 11—Strength of steel banding. 12—Protection of banding with asphalt coating. 13—Cannot burst under pressure. 14—Can be laid in a wet trench. 15—Short curves without specials. 16—Low installation and maintenance cost. 17—Responsibility of company. 18—Not affected by sulphur or chemical solutions.

THE MICHIGAN PIPE COMPANY

Dept. 17 **BAY CITY, MICHIGAN**

New York City, N. Y.....17 East 42nd St.
Oklahoma City, Okla.....105 West 16th St.
Chicago, Ill. .....Leiter Bldg., 15 East Van Buren St.
Boston, Mass.....Room 737, Oliver Bldg.
Cleveland, Ohio.....919 Ulmer Bldg.
Chattanooga, Tenn.....702 James Bldg.
Philadelphia, Pa.....318 Widener Bldg.
Pittsburgh, Pa.....323 Fulton Bldg.

"Steel for Strength—Wood for Durability"

Paper

Imports of paper into the United States during January were about on a par with recent months, judging from receipts through the port of New York last month, which data of course is not official, being compiled from manifests of steamers reaching New York during the month. There was a falling off of imports of newsprint and wrapping paper, whereas substantial amounts of cigarette, hanging, photo and other classes of paper were received.

Paper imports of all kinds through the port of New York in January follow, these data being taken from the manifests of vessels arriving at that port during the month:

Printing

Steiner Paper Corp., 127 cs. from Rotterdam; Oxford University Press, 5 cs. from Liverpool; B. F. Drakenfeld & Co., 69 cs. from Liverpool; Martin & Bechtold, 12 cs. from Rotterdam; Perkins-Goodwin Co., 19 cs. from Rotterdam; P. Puttmann, 81 cs. from Antwerp; P. C. Zuhlke, 202 cs. from Antwerp; E. Dietzgen & Co., 60 cs. from Hamburg; Keuffel & Esser Co., 20 cs. and 46 rolls from Hamburg; Perry, Ryer & Co., 44 cs. from Glasgow; International Forwarding Co., 24 cs. from Antwerp; Anglo-South American Trust Co., 3 cs. from Antwerp; Parsons & Whittemore, 29 bls. from Bremen; W. Hartmann & Co., 636 rolls from Hamburg; Order, 1,042 reels and 333 cs. from Bremen.

Wrapping

A. Price & Son, 32 cs. from Rotterdam; F. C. Strype, 20 cs. from Rotterdam; International Forwarding Co., 17 cs. from Hamburg; J. P. Heffernan Paper Co., 50 bls. from Hamburg; Fidelity International Trust Co., 437 rolls from Hamburg; E. Dietzgen & Co., 52 cs. from Rotterdam and 10 cs. Hamburg; M. M. Cohen, 154 rolls and 50 bls. from Gothenburg; C. K. MacAlpine & Co., 229 rolls and 131 bls. from Gothenburg; Arkell Safety Bag Co., 150 rolls from Gothenburg; Maurice O'Meara Co., 215 bls. from Gothenburg; Borregaard Co., 643 rolls from Gothenburg; National Consumers Paper Corp., 27 bls. from Rotterdam; Albertype Co., 63 cs. from Rotterdam; Rohner, Gehrig & Co., 12 cs. from Hamburg; Order, 95 bls. from Antwerp and 347 reels London.

Cigarette

Standard Products Corp., 395 cs. from Havre and 25 cs. Southampton; Surbrug Co., 23 cs. from Havre; British-American Tobacco Co., 32 cs. from Antwerp; P. J. Schweitzer, 26 cs. from Havre and 96 cs. Marseilles; J. M. Murray, 6 cs. from Barcelona; Bank of the Manhattan Co., 25 cs. from Lisbon; De Manduit Paper Corp., 399 cs. from St. Nazaire; American Tobacco Co., 1,500 cs. from Bordeaux.

Writing

G. W. Sheldon & Co., 16 cs. from Trieste; H. Reeve Angel & Co., 3 cs. from London; J. W. Hampton, Jr., & Co., 6 cs. from Hamburg; Guibont Freres & Co., 20 cs. from Southampton; Republic Bag & Paper Co., 15 cs. from Rotterdam; Order, 91 cs. from Trieste.

Drawing

Favor, Ruhl & Co., 5 cs. from London; Devoe & Raynolds Co., 11 cs. from London; Keuffel & Esser Co., 16 cs. from Hamburg and 9 cs. London; E. Dietzgen & Co., 10 cs. from Hamburg.

Filter

H. Reeve Angel & Co., 27 cs. from London and 20 cs. Southampton; J. Manheimer, 60 bls. from Southampton; Zinkeisen & Co., 6 cs. from Hamburg; E. Fougera & Co., 71 cs. from Bordeaux; Franco-American Import Corp., 40 bls. from Bordeaux.

Tissue

S. Gilbert, 6 cs. from Rotterdam; Brooks Paper Co., 8 cs. from Liverpool; F. C. Strype, 42 cs. from Liverpool; Order, 3 cs. from Liverpool.

Photo

P. C. Zuhlke, 70 cs. from Antwerp; P. Rittman, 24 cs. from Antwerp; Globe Shipping Co., 132 cs. from Bremen; Gevaert Co. of America, 112 cs. from Antwerp; F. Henjes, Jr., 76 cs.

COPYRIGHTED

Cut down *excessive* wrapping paper investment. Why carry two wrapping paper lines for one wrapping paper *purpose?*

MOSINEE

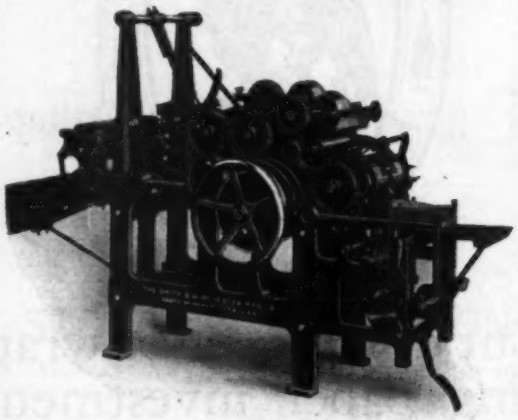
presents a perfect wrapping paper, weight and strength for each wrapping purpose. Made in all weights from 15 pounds to 100 pounds basis. The one complete, standardized and economical line of wrapping paper sold.

Mosinee Kraft

"The Wrapper that Delivers the Goods"

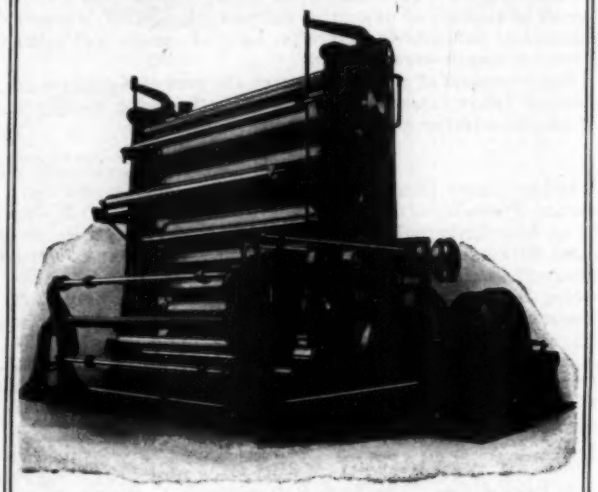
Established 1828
The
Smith & Winchester Mfg. Co.
SOUTH WINDHAM, CONN.

Manufacturers of
Paper Making Machinery



Paper Bag Making Machinery

NORWOOD
SUPER CALENDERS



WE ARE SPECIALISTS IN
Paper Finishing Machinery

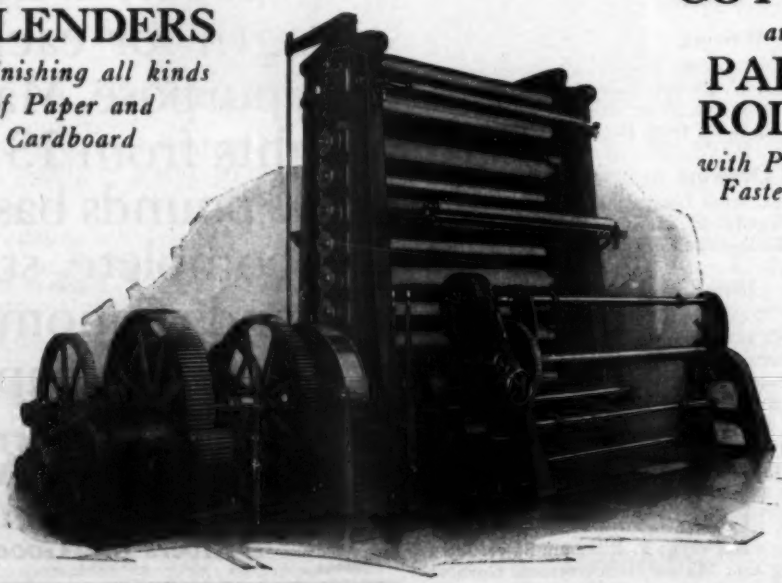
NORWOOD ENGINEERING CO.
FLORENCE, MASS., U. S. A.

Holyoke Machine Co., Holyoke, Mass.
Makers of **Improved Machinery for Wood Pulp and Paper Mills**

LARGEST MAKERS *of*
CALENDERS
for finishing all kinds of Paper and Cardboard

COTTON
and
PAPER ROLLS
with Patented Fastenings

Platers,
Washing and Beating Engines,
Wood Pulp Grinders,
Barkers,
Chippers,
Rag and Paper Dusters



Rag Cutters,
Hydraulic Pumps and Presses,
Hercules Water Wheels and Governors

from Bremen; Phoenix Shipping Co., 15 cs. from Hamburg; Order, 42 cs. from Antwerp.

Hanging

F. J. Emmerich & Co., 144 bls. from Liverpool, 23 pkgs. London, 63 bls. Hamburg and 14 pkgs. Havre; F. & R. Trading Co., 378 bls. from Antwerp; A. C. Dodman, Jr., & Co., 124 bls. from Liverpool, 46 bls. Southampton and 57 cs. Antwerp; W. H. S. Lloyd & Co., 57 bls. from Liverpool and 3 bls. Havre; C. A. Haynes & Co., 249 bls. from London; Panama-Pacific Line, 24 bls. from London; Universal Carloading Co., 3 cs. from Hamburg; F. A. Binder, 20 bls. from Bremen; A. B. Scott, 5 cs. from Havre; Bendix Paper Co., 27 cs. from Hamburg; Park, Benziger & Co., 16 bls. from Trinidad; J. D. Smith & Co., 18 bls. from Hamburg.

Board

Adrian Vuyck, 806 rolls from Rotterdam; Coty, Inc., 128 cs. from Havre; Happel & McAvoy, 7 cs. from Southampton; Metropolitan Import & Mfg. Co., 4 cs. from Bremen and 11 cs. Hamburg; American Shipping Co., 3 cs. from Havre; J. Shore & Co., 13 cs. from Havre; Order, 82 rolls from Rotterdam and 74 bls. Hamburg.

Miscellaneous

Borden & Riley Paper Co., 26 cs. from Antwerp; Boucher Cork Co., 17 cs. from Rotterdam; Japan Paper Co., 8 cs. from Rotterdam, 26 cs. Havre and 55 cs. Genoa; Titan Shipping Co., 44 cs. from Havre and 24 cs. Southampton; C. A. Johnson & Co., 9 bls. from Liverpool; G. W. Sheldom & Co., 5 cs. from London; Whiting-Patterson Co., 13 cs. from Southampton; F. C. Strype, 22 cs. from Havre; P. H. Petry & Co., 24 pkgs. from Havre, 23 cs. Hamburg and 11 cs. Rotterdam; Brown Bros. & Co., 7 cs. from Hamburg; Globe Shipping Co., 3 pkgs. from Rotterdam; S. Gilbert, 12 cs. from Rotterdam; Atlantic Forwarding Co., 13 cs. from Bremen; Louis De Jonge Co., 20 cs. from Hamburg; G. Lueders & Co., 3 cs. from Havre; Hensel, Bruckman & Lorbacher, 13 cs. from Havre; Coenca-Morrison Co., 13 cs. from Havre; Guibont Freres & Co., 4 cs. from Havre; Chemical National Bank, 38 cs. from Glasgow; F. Henjes, Jr., 39 cs. from Bremen; H. D. Catty Co., 6 cs. from Bremen; Quality Art Novelty Co., 31 cs. from Havre; Fuchs & Lang Co., 13 cs. from Canton.

Foreign Trade Opportunities

Additional information regarding the following foreign trade opportunities issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce may be obtained from the Bureau in Washington, D. C., or its branch offices. It is requested that the number of the inquiry be given at all times.

No. 18611—Newsprint paper. Shanghai, China. Purchase and agency desired.

No. 18610—Paper, and printing and binding materials. Cairo, Egypt. Purchase desired.

No. 18654—Paper from wood fibre. Seville, Spain. Purchase desired.

No. 18709—Wrapping paper. Alexandria, Egypt. Agency desired.

No. 18721—Cardboard boxes for bottles. Chihuahua, Mexico. Purchase desired.

No. 18792—Paper cups, 200,000 a year. Tunis, Tunisia. Purchase desired.

No. 18859—Papermaking materials and supplies. Helsingfors, Finland. Agency desired.

No. 18857—Paper, bromide, white, glossy, dull and semi-dull. Batavia, Java. Purchase and agency desired.

No. 18813—Paper and stationery. Calcutta, India. Purchase and agency desired.

No. 18858—Stationery and writing paper, plain and engraved. San Juan, Porto Rico. Agency desired.

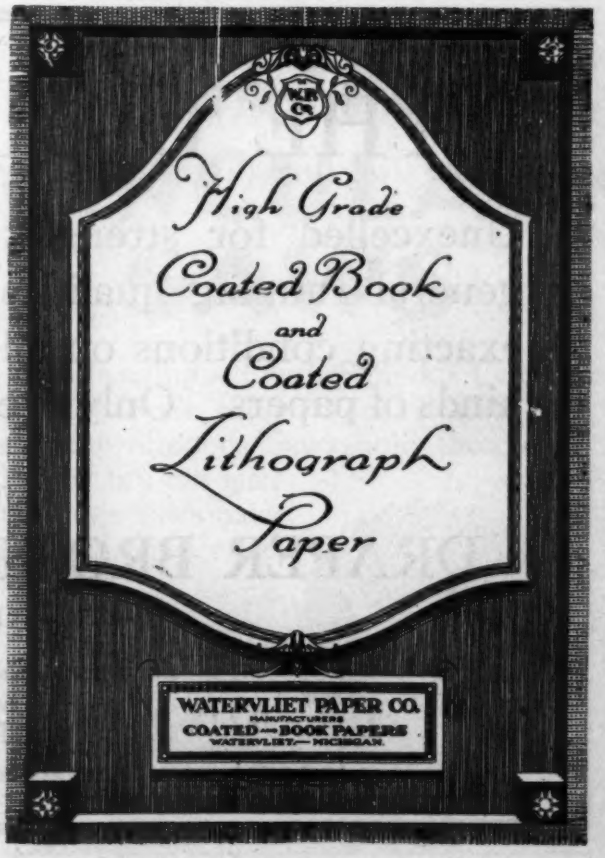
No. 18856—Wrapping paper in small sheets. Casablanca, Morocco. Purchase desired.

No. 18850—Writing and wrapping paper. Colombo Ceylon Purchase and agency desired.

Hungerford Filters
for
Clear Water

Hungerford Softening Filters
for
Soft Water

Hungerford & Terry, Inc.
Clayton, N. J.



Morey Paper Mill Supply Company

99 Chauncy Street BOSTON, MASS.

Vulcan TRADE MARK

DRYER FELTS

BRANDON 3-PLY "TRI-UMPH" AND STANDARD WARP

Deckle Tape and Cutter Webbing—Cotton and Rubber Belting—Enamelled, or Rubber, Fourdrinier Aprons—Rubber Splicing Tissue—Neutral Soap Powder—Dryer Felt Sewing Twine —Superheat Asbestos Packing—Rubber Sheet Packing—Steam and Water Hose "Lambeth" Cotton Transmission Rope

Ticonderoga Machine Works

TICONDEROGA, N. Y., U. S. A.

MANUFACTURERS OF

WARREN IMPROVED CALENDER DOCTORS

With Flexible Blades, Universal Adjustment and Control (PATENTED)

WARREN IMPROVED PATENT DOUBLE DRUM WINDERS

Patent BALL VALVE Hydrant
Stock Circulating Systems *and*
other Paper Mill Specialties

SEND FOR OUR BULLETIN

Pickles' Patent Automatic Steam Regulator

FOR

Paper Making Machines

Which absolutely control the drying of the sheet. Installed on sixty days' trial

W. F. PICKLES Buckland, Conn.

THE DRAPER FELT

Unexcelled for strength, openness, resiliency, and general running qualities. Made to meet the most exacting conditions on all types of machines and all kinds of papers. Only one grade and that the highest.

Made by

DRAPER BROTHERS COMPANY

CANTON, MASS.

Woolen Manufacturers Since 1856

REPRESENTATIVES

L. H. BREYFOGLE, Kalamazoo, Mich. INTERNATIONAL TRADING CO., Philadelphia, Pa.

Import Committee Obtains Favorable Decisions

Several cases initiated through the efforts of the Import Committee of the American Paper Industry to check unfair foreign competition from abroad have resulted in the abandonment of their cases by the protesting importers, or in favorable decisions before the Board of General Appraisers, the trial court of the Customs Service. Such cases involved the following:

Writing paper with special finish subjected to an additional 10 per cent duty for such finish.

Book paper offered at Philadelphia as standard newsprint duty free abandoned upon the showing that it contained an excess of sulphite over the amount allowed by the definition of standard newsprint, and is thereby subject to the printing paper duty.

Hanging paper entered as uncolored found subject to the higher duty for colored hanging paper.

So-called **rice paper** (pith of bamboo) denied admission under the duty classification of tissue paper and held dutiable at a higher rate as paper not specially provided for.

A slight advance in value has been made on hanging paper for a New York importer, but penalty was remitted on satisfactory showing by the importer that there had been no intent to defraud the government.

Two long pending cases involving undervaluation of German book paper have been decided by the United States Board of General Appraisers (Customs Trial Court), in favor of the contention of the Import Committee. In each case the valuation was raised materially. The decision in the case of one shipment of paper invoiced at $10.50 per 100 kilos increased the valuation to $14.50. In the other case the paper was invoiced at $6.40 and $6 according to grade, and the decision increases the valuation to $8.60 and $8 respectively per 100 kilos.

German rotogravure paper brought in through Norfolk in still another decision was invoiced at $4 per hundred pounds, and the importer claimed an allowance for interior freight in Germany. The board's decision increased the valuation $4.21 and denied the freight allowance.

Tells How Pulpwood Supplies Are Obtained

How the pulp and paper industry obtains its present day supplies of pulpwood was described by D. A. Crocker, forester of the Woodlands Section of the American Paper and Pulp Association, at the luncheon of the New York City Salesmen's Association on January 18.

Mr. Crocker, who is a forester and woods manager of long experience described in particular detail the methods of purchasing and operating common in the northeast for peeled and rough four-foot pulpwood, explaining the advantages and disadvantages of the various methods under different conditions and for different mills, and pointing out opportunities for improvements.

Following his description of operating and purchasing methods in the northeast, Mr. Crocker discussed briefly the outstanding differences in methods in Canada, the Lake States and the South Atlantic States.

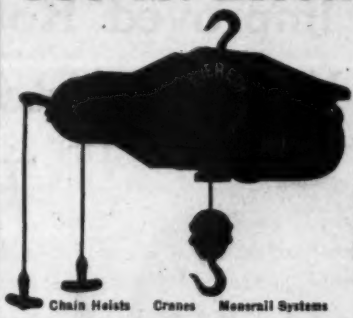
In conclusion he explained the work which he is doing for the Woodlands Section and the service the Woodlands Section now renders to the industry. This includes regional investigations of questions of pulpwood supply and consumption and detailed studies of possible profitable methods of forest management. Also service on operating problems such as the introduction of motor transportation into woods operations, use of sawing machines and other problems looking toward the introduction of machinery into woods operations. Other phases of the work include studies of wood purchasing problems, woods cost accounting methods and many others confronting the woods manager.

The Woodlands Section is now in a position to be of great service to the industry, and judging from the requests for studies of specific problems which have already been received, the industry intends to take advantage of this fact.

The Saxon Paper Products, Inc., of 78 Grand street, New York, has increased its capital from $10,000 to $50,000.

500 lb. Electric Hoist

$225.00



This Everedy Hoist is the most accessible hoist made. Light—500 lb. hoist weighs 225 lbs.; 1000 lb. hoist 250 lbs. Speedy—40 feet per minute A. C., 35 feet per minute D. C. Limit stop at top and bottom adjustable to any point. Suspended wherever chain or air hoist is placed.

Chain Hoists Cranes Monorail Systems

READING CHAIN & BLOCK CORP.

READING, PA.

C. S. B. Sprinkler Heads

Keep a stock on hand to restore protection without delay

Approved by Associated Factory Mutual Fire Insurance Companies and the Underwriters' Laboratories, Chicago.

C. S. B. Sprinkler Co.

54 Batterymarch St.

BOSTON MASS.

SIMONDS CIRCULAR SAWS

Mills equipped with Simonds Circular Saws provide longer runs at less cost, because Simonds Saws hold their edge longer and cut fast. Simonds Saws have the steel, temper and tension.

Simonds Saw and Steel Co.

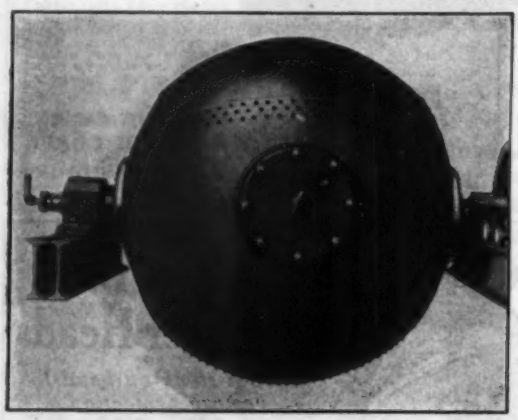
Established 1832 - Fitchburg, Mass

Boston, Mass., Chicago, Ill.

Biggs Improved Rotary Bleaching Engine

(Patents Pending)

for High Consistency Cold Bleaching



THE Biggs Improved Rotary Bleacher will handle stock at consistencies from 12 to 20% or even as high as 30%. This makes cold bleaching possible and insures very white, firm and strong pulp.

The Biggs 14-foot Engine will bleach a 3½ to 4-ton batch in one hour, consuming only 6 to 8 horsepower. The bleaching being done cold in a closed retort there is a tremendous saving in chlorine.

Write for full particulars relative to this new profit-earning equipment for paper mills.

THE BIGGS BOILER WORKS COMPANY

Seneca Place and Case Avenue AKRON, OHIO

BOILER WORKS CO. The Biggs AKRON OHIO

GLOBE and CYLINDER

ROTARY BLEACHING BOILERS

for Years of Dependable Cooking and Bleaching

A JORDAN ENGINE *for* EVERY PURPOSE

Direct Connected Motor Driven Jordans

Six Sizes:—
Baby Jordan
Pony Monarch
Monarch
Mammoth, Jr.
Mammoth
Bull Dog

DURING the past two years, over 80% of our Jordan output has been of the Direct Connected type.

Our Type "D" Jordans are particularly adapted to direct motor drive because of their sturdy construction and the design of our couplings and motor bases permits ample adjustment to insure full wear of Jordan plug and shell knives.

Paper Mill Engineers recognize more fully each day the advantages of Direct Connected units. Greater production and a finer quality of stock can be obtained and, because the speed of a motor is inherently uniform, a maximum quantity of a given grade of stock can be produced. Then, too, through the use of meters, the finishing point of the stock can be accurately indicated and the degree of contact of the Jordan knives can be determined more readily than when the "feel" of the operator alone is relied upon. Because belt pull is eliminated, the undue wear on bearings and eccentric position of the plug, so often found in Belt Driven units, is avoided.

Specifications and Prices Furnished on Request

THE NOBLE & WOOD MACHINE CO. **Hoosick Falls, N. Y.**

For list of our entire products, see page 387 in the 1925 Paper and Pulp Mill Catalogue